University of Alberta

Relationship of Early Family Environment to Child Behavioural Development at Age 7 Years

by

Karen Marie Benzies

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Abstract

The purpose of this study was to examine the relationship of early family environment to behavioural development in young children. In Phase I, a longitudinal, correlational design was used to examine the relationship of early parenting stress, marital quality, and family socioeconomic status, with conduct behaviour problems, emotional symptoms, and prosocial behaviours at age 7 years. During infancy, mothers and fathers completed the Parenting Stress Index and Dyadic Adjustment Scale as part of the data collected for an earlier study. When their child was 7 years old, 62 mothers and 56 fathers completed the Eyberg Child Behavior Inventory Intensity (frequency of behaviour) and Problem (impact of behaviour) scales, and the emotional symptoms and prosocial behaviour scales from the National Longitudinal Survey of Children and Youth. Mothers' early perceptions of the child as distractible and parent domain stress were positively related to their reports of the frequency and impact of behaviour problems at age 7 years. There was a negative relationship between mothers' early perceptions of the child as distractible and the development of prosocial behaviours. Like mothers, fathers' early perceptions of their child as distractible was positively related to their reports of the impact of behaviour problems. However, unlike mothers, there was an unexpected negative relationship between parent domain stress and fathers' reports of the frequency of behaviour problems.

In Phase II, semi-structured interviews were conducted with eight parents, at least one of whom reported a high frequency of conduct behaviour problems for their child. Themes that emerged suggest that family environment and society have a greater impact on the development of behaviour problems than biological factors. According to parents,

economic instability, marital conflict, chronic illness in the family, issues of parenting in the family of origin, and lack of support for parenting influenced the development of child behavioural problems. Comparison of findings from both phases suggests that mothers' and fathers' perceptions of their child's behaviour are different and need to be included in behavioural assessments. The parenting stress measure used in this study does not include all the dimensions of stress that influence parenting and researchers need to address broader social issues confronting families with children.

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DEDICATION

This dissertation is dedicated to my husband, Daniel, who encouraged me throughout my graduate education, and to our children, Kathryn, John, Heather, Michael, and David who experienced suboptimal parenting so that I could search for answers to help others.

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CHAPTER 1

Statement of the Problem

Behaviour and emotional problems in childhood are an important mental health issue affecting Canadian children and their families. Much research has been done about causal risk factors, prevention, and treatment, yet there is insufficient evidence to support changes in clinical practice or policy decision-making (Wadell, Lomas, Giacomini, & Offord, 1998).

Behaviour and emotional problems in childhood are relatively common. In a Canadian epidemiological survey (N=23,000), 20.7% of children from 4 to 11 years of age were reported by parents to have one or more behaviour problems or emotional symptoms (Human Resources Development Canada/Statistics Canada, 1996). These problems are a common reason for referral to child psychiatric services (John, Offord, Boyle, & Racine, 1995). Children with behaviour problems may be at increased risk for depression (Adams, Hillman, & Gaydos, 1994), poor short-term and long-term adjustment (Pless et al., 1994), child abuse (O'Keefe, 1995), and future psychiatric disorders (Caspi, Moffitt, Newman, & Silva, 1996). Canadian children with one or more behaviour problems or emotional symptoms had a significantly greater risk of grade retention than children without problems (Human Resources Development Canada/Statistics Canada). Some researchers (Newman et al, 1996; Richman, Stevenson, & Graham, 1975) support the notion that behaviour problems are stable throughout childhood and that children do not "grow out of" behaviour problems. Furthermore, children with behaviour problems and emotional symptoms tend to be less responsive to

therapeutic intervention as they grow older and behaviour patterns become well established (Grizenko, Sayegh, & Papineau, 1994). Considerable literature exists to support parenting practices as the mechanism that accounts for the stability of anti-social behaviours in families (Patterson, 1998). Significant transgeneration correlations were found for antisocial behaviours between parents and their children (Cairns, Cairns, Xie, Leung, & Hearne, 1998; Serbin et al., 1998).

Behaviour and emotional problems in childhood are a common source of frustration for families and society. Frequently, behaviour problems are not addressed until the child's behaviour significantly affects the family, the child's performance at school, or interactions with peers. By this time, negative patterns of behaviours have become well established and are difficult to modify. Families of children with behaviour problems carry a heavy burden of suffering in attempting to re-establish functional relationships within the family and the larger social environment. The burden of suffering for many families could be reduced or even eliminated if the question of behaviour problems was routinely addressed with parents of infants and young children. The ability to predict behaviour problems based on an assessment during infancy would facilitate early intervention to assist families with children at risk for behaviour problems. It is important to consider not only factors that influence the development of problem behaviours, but also the factors that contribute to positive aspects of interpersonal relationships such as prosocial behaviours (altruism or concern for others). A better understanding of prosocial behaviours may provide health care professionals with information to assist parents to promote healthy social development in children.

Prevention of child behaviour problems and promotion of prosocial behaviours have multiple benefits in terms of reduced cost for treatment and a healthier, more productive society. Frequently, programs designed to prevent behaviour problems have focused on the identification and treatment of children who have already demonstrated problematic behaviour. One advantage to this approach is that the provision of services is cost-effective in the sense that those children who are most likely to have continued problems are targeted for treatment. In contrast, a population health approach would target the social determinants of health that may place a child and family at increased risk for a variety of poor outcomes, including the development of problem behaviours. Inherent in this approach is a belief in the importance of early experiences in shaping the child's development (Federal/Provincial/Territorial Advisory Committee on Population Health, 1998; McCain & Mustard, 1999). That is, the child's first years are viewed as formative ones during which prevention and intervention services may alter the child's development more easily than if services are provided later. Although such an approach targets a larger number of children, and therefore is more costly initially, it may be more beneficial over the long term (McCain & Mustard).

Traditionally, nurses have worked with families and young children and have included in their practice, education and support for parenting and child development. Access to families through community health services provides nurses with an avenue for an early assessment and the potential to prevent some behaviour problems or intervene earlier in the case of others. Nurses possess the education and skills to be involved in universal, multi-disciplinary, community-based parenting education programs to promote

prosocial behaviour in children, as well as specialized programs for families at high risk for having a child with behaviour and emotional problems. Nursing research is warranted in order to expand what is known about the factors that influence behaviour and emotional problems in children as a basis for early intervention to prevent problem behaviours and to promote the development of prosocial behaviours.

Definition of Terms

The various definitions used by researchers in different disciplines create a major obstacle to understanding research in the area of child behavioural development. For example, researchers in the field of medicine tend to use the DSM-IV categories (American Psychiatric Association, 1994) to diagnose conduct, oppositional defiant, attention deficit/hyperactivity, and emotional disorders. Those in the field of psychology more frequently use the terms Externalizing and Internalizing behaviours derived from the Child Behaviour Checklist (CBCL; Achenbach, 1978) to describe similar behaviours. The definitions of child behaviour that were used as the dependent variables for this study and the way they were operationalized are described in the following section.

Behaviour problems refer to conduct behaviour problems that include aggression toward others, non-compliance, temper tantrums, disruptive and annoying behaviours, stealing, and lying (Eyberg, 1992). Conduct behaviour problems also include disobedience, irresponsibility, destructiveness, impertinence, negativism, distractibility, fighting, attention seeking, tantrumming, hyperactivity, irritability, and inattentiveness (Robinson, Eyberg, & Ross, 1980). These behaviours were measured by the Eyberg Child Behavior Inventory (ECBI; Eyberg). Henceforth, reference to conduct behaviour

problems will be associated with the ECBI. Reference to Externalizing behaviour problems will be associated with the CBCL. The general term, behaviour problems, will refer to all other measures of direct aggression, non-compliance, destructiveness, and distractibility. Emotional symptoms are characterized by feelings of anxiety, loneliness, or depression (Human Resources Development Canada/Statistics Canada, 1996). These problems were measured by the Emotional Symptoms scale of the National Longitudinal Survey of Children and Youth (NLSCY). Henceforth, reference to emotional symptoms will be associated with the NLSCY Emotional Symptoms scale. The term Internalizing symptoms will refer to emotional symptoms measured by the CBCL. Prosocial behaviour refers to "interpersonal behaviours (e.g. helping, sharing, giving, co-operating, responding to distress) whose common theme is a concern for others" (Weir & Dunveen, 1981, p. 357). These behaviours were measured by the Prosocial Behaviour scale of the NLSCY (Human Resources Development Canada /Statistics Canada).

The predictor variables used in this study were parenting stress, marital quality, family socioeconomic status, birth status (preterm or term), and child gender. Parenting stress refers to the parent's perception of factors in the parent-child system that may place the system at risk for parenting problems or child developmental delays. Two scales from the Parenting Stress Index (PSI; Abidin, 1995), the Parent Domain and the Child Domain, were used to measure parenting stress. Marital quality refers to an individual's perception of overall satisfaction in a couple relationship, as well as perceptions of cohesion, consensus, and expression of affection in the relationship. The Dyadic Adjustment Scale (DAS; Spanier, 1989) was used to measure marital quality. Socioeconomic status is an

estimate of the status an individual occupies within the hierarchical structure of society (Hollingshead, 1975). The Hollingshead Four-Factor Index of Social Status was used to measure socioeconomic status. Two factors from the Hollingshead, the number of years of formal education completed and the occupation, for each parent were combined to estimate family socioeconomic status. Infant birth status refers to whether the infant was born preterm or full term. Preterm infants are infants born more than 3 weeks prior to their due date and term infants are infants born between the 37th week and the completion of 42nd week of gestation (Shaffer, 1999).

Theoretical Perspective

Structural/Behavioral Model of Development

The theoretical perspective in this study is derived from the Structural/Behavioral Model of development (Horowitz, 1990). The basic premise is that there are two dimensions in the development of children. One dimension involves individual child characteristics, including differences in genetic or acquired attributes, which promote or constrain development. The child characteristics interact with the second dimension, the environment. Optimal development is related to non-constraining child characteristics and a facilitative environment. The Structural/Behavioral Model functions under the assumption that there are periodic reorganizations of the factors that comprise the model. That is, child characteristics and the environment do not necessarily remain constant throughout development. As a result, it is no longer appropriate to consider only the relative strength of influence of child characteristics and environmental factors. Rather, it is necessary to understand the complex interplay among the variables over time. To some

extent, individuals select and shape their environments through their behaviours. For example, children with an easy temperament are less demanding and respond more positively in interactions with parents. These child behaviours facilitate warmer, more sensitive, and more responsive parenting behaviours. The converse may contribute to negative patterns of parent and child interaction in the family and the development of later behaviour problems. In this research, the child characteristics considered are birth status (preterm or full term) and child gender. The family environmental factors are parenting stress, marital quality, and family socioeconomic status. An understanding of the impact of these variables on child behaviour is important to expand the knowledge in the area of child behavioural development. However, an understanding of the variables, in and of themselves, is inadequate to explain the processes underlying child behavioural development.

Symbolic Interactionism

The theoretical perspective of symbolic interactionism was added to guide the exploration of the parent's perspective of their child's behaviour. Symbolic interactionism focuses on the nature of social interaction and how the individual defines and gives meanings to a given situation (Blumer, 1969). Although meaning may be influenced by others with whom interaction takes place, meaning is primarily a result of the individual's interpretation of a situation. The meaning interpreted by the individual determines how the individual will act or behave. As a result, symbolic interactionism orientates the researcher to observe not only the biological and environmental characteristics that contribute to childhood behaviours, but also to observe how parents

and children view situations and act or behave according to their interpretation of what is going on.

In summary, the Structural/Behavioral Model of development and symbolic interactionism served as the theoretical perspectives to guide the study. The Structural/Behavioral Model guided the exploration of the child characteristics and environmental factors that influence the development of behaviours in Phase I, while symbolic interactionism guided the exploration of parenting perceptions of their response to stress and their child's behaviour in Phase II.

CHAPTER 2

Review of the Literature

The literature review begins with a discussion of the development of prosocial behaviour. Then an overview of behaviour problems and emotional symptoms will be presented. Variables related to the development of behaviour problems, emotional symptoms, and prosocial behaviour are organized according to the Structural/Behavioral Model of development. Variables thought to be associated with developmental outcomes through their effect on either child characteristics (preterm birth and child gender) or family environment (parenting stress, marital quality, and socioeconomic status) are discussed.

Prosocial Behaviour

Prosocial behaviour is generally defined as voluntary behaviour intended to benefit another (Eisenberg et al., 1999) and consists of interpersonal behaviours related to concern for others, such as helping, sharing, giving, cooperating, and responding to distress (Shaffer, 1999; Weir & Dunveen, 1981). One type of prosocial behaviour is altruism, which is defined as intrinsically motivated voluntary behaviour to help another (Eisenberg et al.). Eisenberg and her colleagues suggested that altruism is a stable personality characteristic. However, it is unclear if altruism is a biological trait or the result of continuous socialization practices. Empathy, sympathy, and personal distress are also terms associated with prosocial behaviour. Empathy is defined as an emotional reaction elicited by and congruent with another's emotional state (Eisenberg et al.). Empathy can result in sympathy (concern for another based on understanding the other's

emotional state) or personal distress (an negative, self-focused emotional reaction to others' emotional state). Measures of sympathy and empathy are often used as indicators of prosocial personality and are expected to motivate altruistic behaviour. An other type of prosocial behaviour is extrinsically motivated and may result from embarrassment, guilt, and shame (Eisenberg, 2000). Social competence is sometimes associated with prosocial behaviour and includes empathy but, it usually refers to acceptability of social behaviour rather than active helping and concern for others (Guralnick & Neville, 1997). In the present study, the term prosocial behaviour will refer to both intrinsically and extrinsically motivated behaviours that demonstrate a concern for others.

Children who display prosocial behaviours are able to accurately interpret behaviours in social circumstances, are more sensitive to others' feelings, and are able to regulate or control their own behaviours (Garner, Jones, & Miner, 1994). According to peers, children who display prosocial behaviours at school are good leaders, do 'nice' things for others, help others, and seem happy at school (Crick & Grotpeter, 1995). Additionally, it appears that the construct of prosocial behaviour is assumed to be at the opposite end of a continuum with child behaviour problems (Tremblay et al., 1992). If the variables that predict prosocial behaviours are qualitatively different from those that predict problem behaviours (Dunn, Deater-Deckard, Pickering, O'Connor, & Golding, 1998), these assumptions about the construct of prosocial behaviour need to be questioned. Considerable research has focused on the development of prosocial behaviours in young children however, the role of family environment in the development of prosocial behaviours is unclear.

In a review of early intervention literature, Guralanick and Neville (1997) suggested that the quality of the parent-child relationship contributes to the development of prosocial behaviours. Consistent, warm, and responsive parent-child interactions form the basis of trust for the child to safely explore the social world, to expect positive reactions from others, to regulate their own behaviours, and to accurately decode the behaviours of others. Kochanska and her colleagues (1998) found that children's receptiveness to maternal influence and teaching was linked to prosocial behaviours in 13 to 15 month old children. Much of the early learning occurs in the context of early parent-child interactions. Secure attachment to the parent creates an interaction environment in which the child is oriented to the parent, receptive, and willing to learn (Kochanska, Tjebkes, & Forman). Additionally, Garner and colleagues (1994) found a relationship between children's prosocial behaviour and maternal reports of positive emotion and socialization practices in low-income families. In a large community survey, maternal depressive symptoms and lack of social support were not related to prosocial behaviours in children (Dunn et al., 1998).

Some evidence exists for the influence of biological characteristics of the child on the development of prosocial behaviours. In a longitudinal Dutch study, Schothorst and vanEngeland (1996) found significant differences in social competence between preterm children and full term controls. Parents reported lower social competence scores at early school age, particularly for children born small for gestational age and preterm. Social competence scores were very stable between early school age and early adolescence, particularly for children born at less than 32 weeks gestation.

Using teacher report, Weir and Dunveen (1981) consistently found gender differences in prosocial behaviour for children at early school age. Using a different measure and controlling for family structure, Dunn and her colleagues (1998) also found that mothers reported significantly more prosocial behaviours for girls than boys. In contrast, Grusec and her colleagues (1996) found no gender differences in prosocial behaviours. They suggested that girls sometimes emit stronger facial expressions of sympathy than boys and these facial expressions may be interpreted by others as more prosocial behaviour. Similar to Grusec and her colleagues, Eisenberg and her colleagues (1999) found that girls did not reliably differ from boys in the amount of sympathy they reported or in their willingness to help or comfort others. Additional research would assist to clarify the understanding of the biological child characteristics and family environmental influences that contribute to the development of prosocial behaviours in young children.

Behaviour Problems and Emotional Symptoms

Parents and their children face a variety of challenges throughout development, including behaviour problems and emotional symptoms. Child behaviour problems include conduct behaviour problems such as direct aggression toward others, disobedience, distractibility, hyperactivity, disruptive and annoying behaviours, and property offences such as stealing (Eyberg, 1992). Emotional symptoms include anxiety, loneliness, or depression (Human Resources Development Canada /Statistics Canada, 1996). In an epidemiological sample of 4 to 11 year old Canadian children, 20.7% had one or more behavioral problems or emotional symptoms. Recent longitudinal research

provided evidence of the relationship between childhood behavioural problems and emotional symptoms and the development of later substance abuse (Offord & Bennett, 1994), criminal activity (Sprott & Doob, 1998), and adult mental illness (Caspi et al., 1996). However, the majority of research has been medically oriented with a clear emphasis on the early identification and treatment of psychopathology and does not consider prevention of behaviour problems and emotional symptoms.

There are methodological issues related to the measurement of behaviour problems and emotional symptoms in children. Behaviour rating scales provide a convenient and cost-effective method of gathering parent report data in a standardized format (Eisenstadt, McElreath, Eyberg, & McNeil, 1994). However, researchers agree that it is the parental perception of behaviour and perhaps not actual behaviour that is being measured (Christensen, Margolin, & Sullaway, 1992; Sawyer, Baghurst, & Clark, 1992; Sourander, Helenius, & Piha, 1995). Parental perceptions may be related to factors such as the amount of exposure to the child (Hewitt, Silberg, Neale, Eaves, & Erickson, 1992) or parental mental health (Briggs-Gowan, Carter, & Schwab-Stone, 1996; Stevenson, Thompson, & Sonuga-Barke, 1996).

The amount of parental exposure to the child may be an important factor in parental perceptions of the child's behaviour. Koniak-Griffin and Verzemnieks (1995) found a stronger correlation between fathers' and mothers' reports of child behaviours at age 2 years when the mothers were employed outside the home. In another longitudinal, prospective study of the relationship of early family variables and behavioural development at age 4 ½ years, the mothers' regression models (but not fathers' or

teachers') significantly predicted behaviour problems (Abidin, Jenkins, & McGaughey, 1992). The sample used by Abidin and colleagues consisted primarily of two-parent families where half of the mothers were homemakers. The results from these studies suggest that the amount of parental exposure to their child may be reflected in their behaviour problem ratings.

Some researchers suggest that mental health has an impact on parental perceptions of child behaviour problems. Webster-Stratton (1988) found a significant relationship between maternal mental health and maternal report of their child's behaviour problems. Others report similar findings. Eyberg (1992) suggested that parental perceptions of child behaviours may be more a function of psychological distress rather than of the child's actual behaviours. In a Canadian longitudinal study, Serbin and colleagues (1998) found that mothers who reported more personal problems also perceived more problems in their children. The findings for mothers are in contrast to a weak relationship found between paternal mental health and their perceptions of child behaviour problems (Webster-Stratton). Webster-Stratton suggested that when mothers, but not fathers, are anxious, depressed, or distressed they may have a lower threshold for misbehavior in their child and perceive an increased frequency or impact of child behaviour problems. Alternatively, mother's mental health problems may be related to management of child behaviour problem on a daily basis (for a review see Cummings & Davies, 1994). Further longitudinal research including data from both mothers and fathers is required to determine how parental perceptions of child behaviours may differ and under what circumstances.

Some researchers suggested that the combined effects of biological and environmental risk factors pose a double threat to children's development (Escalona, 1982; Werner, 1994). The Structural/Behavioral Model proposes that a vulnerable child in a non-facilitative environment is at greatest risk for poor developmental outcomes. Variables related to the development of child behaviour problems and emotional symptoms will be discussed under the headings of characteristics of the child and environmental factors.

Characteristics of the Child

The relationship of the characteristics of the child to behavioural development has been explored with varying results. The child characteristics examined in this study were birth status (preterm or full term) and child gender because these variables have been shown to have an impact on behavioural development.

Preterm Birth Status

Since advancements in neonatal intensive care have increased the survival rates for infants born preterm (less than 37 weeks gestation), much attention has focused on research into the developmental outcomes for these infants. Typically preterm children demonstrate uneven developmental profiles with delays in the areas of cognitive, language, social, and motor development (McCormick, Gortmaker, & Sobol, 1990; Roth et al., 1994; Schraeder, Heverly, & O'Brien, 1996). The behavioural profile that most frequently emerges in studies of preterm children is characterized by high activity levels and distractibility (Buka, Lipsitt, & Tsuang, 1992). An increased frequency of behavioural problems and a decreased frequency of prosocial behaviours were reported

when the potential for biological insults to the child was severe, such as with very preterm birth (less than 32 weeks gestation) or being small for gestational age (less than the 10th percentile) at birth (Schothorst & vanEngeland, 1996). There were no significant differences in conduct behaviour problems found between healthy preterm children and their full term counterparts at age 4 years (Benzies, Harrison, & Magill-Evans, 1998).

Limited empirical evidence exists to identify the mechanism underlying the link between preterm birth and behavioural development. The mechanism may be indirect and act through the influence of neurological impairment. Complications associated with preterm birth such as hypoxia and intracranial bleeding constitute a potential risk to brain development (Schraeder et al., 1996). Preterm children display a greater prevalence of minor neurological dysfunction and cognitive impairment at school age (Roth et al., 1994). Neurological dysfunction and cognitive impairment appear to be associated with behavioural and learning problems (Klebanov, Brooks-Gunn, & McCormick, 1994). Children with learning problems and poor academic performance are more likely to have behaviour problems (Thompson, Lampripon, Johnson, & Eckstein, 1990). Alternatively, subtle neurological dysfunction associated with preterm birth may influence behavioural development more directly through impairment of mental processing abilities. Impaired processing abilities may affect how a child interprets and responds to the social cues of others (Crick & Dodge, 1994). In a study of children with aggressive behaviours, Crick and Dodge found that the inability to recognize the behaviours of peers as non-hostile contributed to the frequency of initiation of aggression.

For the majority of preterm infants, the long term effects of perinatal complications on behavioural development are strongly influenced by facilitative environments (Buka et al., 1992; Cohen, Parmalee, Beckwith, & Sigman, 1992; Landry, Smith, Miller-Loncar, & Swank, 1997). For low birth weight infants, the home environment accounted for half of the variance in outcomes (Schraeder et al., 1996). For healthy preterm children, the child's environment appeared to have a greater influence on behavioural outcomes than the child characteristics (Benzies et al., 1998; Brandt, Magyary, Hammond, & Barnard, 1992). While all children require a supportive environment for optimal development, preterm children may be especially sensitive to their rearing environment. In a classic study, Escalona (1982) found that preterm birth was consistently related to impaired physical and psychological development only when combined with chronic poverty, family discord, parental mental illness, and other persistently poor environments for children.

In summary, preterm children are exposed to varying degrees of perinatal risk and are reared in a broad range of family environments. As a result, there will be different risks for behaviour problems within the group of preterm children. The majority of the research literature has focused on very low birth weight preterm infants. However, the process for the influence of preterm birth on behavioral development in children at varying degrees of risk is unclear. Additional research is needed with samples of healthy preterm children to provide insight into the processes underlying behavioural development for this group.

Child Gender

Findings from several epidemiological studies suggest gender differences in behaviour problems exist among preschool and school age children (Earls, 1987; Human Resources Development Canada/Statistics Canada, 1996; Richman et al., 1975). Conversely, in a small community sample of children at age 2 years, Koniak- Griffin & Verzemieks (1995) found no gender differences in behaviour problems. Similar findings were reported for a small community sample (N=80 mothers and 72 fathers) of healthy preterm and term children at age 4 years (Benzies et al., 1998). In a similar sample of healthy preterm infants, gender was not a significant discriminator of behaviour problems at age 8 years (Brandt et al., 1992). However, in a large prospective study of preterm and term infants at school age, all the boys (not only preterm boys) demonstrated more behaviour problems than girls (Schothorst & vanEngeland, 1996). This finding is consistent with a classic review comparing characteristics of boys and girls. Macoby and Jacklin (1974) concluded that there was a small but reliable gender difference in aggression. The lack of significant differences in behaviour problems between boys and girls in some studies may be related to small sample sizes or the use of different instruments to measure the outcome variables.

Behaviour problem profiles in boys tend to include physical aggression and remain stable throughout childhood (McCord & Tremblay, 1992; Richman et al., 1975). Behaviour problems in childhood are frequently associated with increased criminal behaviours, substance abuse, mental health problems in adolescence and adulthood (Offord & Bennett, 1994). Often, parents punish boys more severely for aggressive

behaviours (Deater-Deckard & Dodge, 1997). Social learning theory supports the notion that harsh discipline by parents results in vicarious learning of aggression and may result in increased behaviour problems in the child. Increased harsh discipline for boys may explain gender differences in aggression.

Behaviour profiles in girls tend to be somewhat different. Girls are more likely than boys to exhibit relational or indirect aggression toward others (Crick & Grotpeter, 1995). In a longitudinal study, Robins (1986) reported that aggressive girls are less likely than boys to engage in criminal behaviour and more likely to experience depression when they reach adulthood. In a prospective Canadian sample, childhood aggression in girls was predictive of teen parenthood and high school dropout (Serbin et al., 1998). This pattern of high-risk behaviours has been corroborated in other prospective longitudinal studies of aggressive girls (Cairns & Cairns, 1994).

The frequency of child emotional symptoms reported by mothers of Canadian children aged 4 to 11 years in a national survey was 8.8% (Human Resources Development Canada/Statistics Canada, 1996). There was no marked difference between boys (9%) and girls (8.6%) in the prevalence of emotional symptoms. Childhood emotional symptoms in girls are a risk factor for school dropout and adolescent parenthood as a function of its association with low academic performance (Serbin et al., 1998). There is an indirect relationship between emotional symptoms and poor outcomes for these girls. Frequently withdrawn girls have poor academic abilities. Therefore, the academic and social motivation to stay in school is decreased. Adolescent parenthood is viewed as a path to an adult role involving little interaction outside the home (Serbin et

al.). Emotional symptoms in boys at age 3 predicted more alcohol-related problems at age 21 years (Caspi et al., 1996). Other research literature is equivocal about the impact of gender on prosocial behavioural development (Dunn et al., 1998; Eisenberg et al., 1999; Grusec et al., 1996).

In summary, the evidence about the influence of child gender on the behavioural development in young children is inconclusive. Depending on the behavioural construct being measured and the child's age at measurement, researchers have come to diverse conclusions about the impact of gender on behavioural development.

Environmental Factors

According to the Structural/Behavioral Model, environmental factors contribute to developmental outcomes in addition to characteristics of the child. While a complex array of environmental variables may contribute to developmental outcomes, only parenting stress, marital quality, and socioeconomic status are considered in the present study.

Parenting Stress

Children reared in families experiencing high levels of stress are at increased risk for the development of behaviour problems (Bramlett, Hall, & Rowell, 1995; Moss, Rosseau, Parent, St-Laurent, & Saintonge, 1998; Ross, Blanc, McNeil, Eyberg, & Hembree-Kigin, 1998). All parents must cope with the minor daily stressors associated with being a parent (Deater-Deckard & Scarr, 1996). However, higher levels of parenting stress may be associated with major life transitions, such as gaining or losing individual family members, changing jobs, and marital separation (Abidin, 1997). Family problems such as unemployment, crowded living conditions, and illness contribute to parenting

stress (Webster-Stratton, 1997). The effects of high levels of parenting stress can accumulate over time and have a negative impact on family relationships (Quittner, Glueckauf, & Jackson, 1990). However, perceived availability of support for parenting may be an essential resource to help alleviate parenting stress (Webster-Stratton, 1990).

Parents in families experiencing high levels of stress displayed a negative attitude toward the child and employed inconsistent discipline (Webster-Stratton, 1997). The inability of the parent to interact positively with the child and provide consistent discipline may result in the development of behavioural problems. In a longitudinal study of early family variables and child behavioural outcomes, mother's reports of parenting stress and life stress during the child's first year contributed significantly to child behaviour problems at age 4 ½ years (Abidin et al., 1992).

Living in a low income family is stressful for parents and that stress affects the parent's capacity to be positive, warm, and supportive in interactions with his or her child (McLoyd, 1998). A model for economic distress (Conger, Patterson, & Ge, 1995) supports a relationship between economic stress, uninvolved parenting, and poor adolescent behavioural outcomes. Conger suggested that parents who experience economic stress tend to become depressed, which increases marital conflict. Marital conflict then disrupts each parent's ability to be a supportive, involved parent, which contributes to adolescent conduct behaviour problems. The model has not been applied in research with samples of children who are younger than adolescents.

High levels of parenting stress may be associated with characteristics of the child, such as preterm birth (Miles & Holditch-Davis, 1997). Miles and Holditch-Davis found

that the birth of a preterm infant is a potential stressor for parents as individuals and for their marital relationship. Also, preterm birth violates parental expectations for the infant and may strain emotional resources in the family (Miles & Holditch-Davis). While it is suggested in the research literature that caring for a preterm infant adds additional stress to parenting, this stress may decrease over time. In a study that compared mothers of very low birth weight children and their full term controls, Tobey and Schraeder (1990) found no difference in levels of parenting stress when the children were age 5 years.

Marital quality

The marital relationship is the primary source of support in couple relationships (Erel & Burman, 1995). Marital conflict is related to disrupted parenting and problem behaviours in children (Harrist & Ainslie, 1998; Katz & Gottman, 1993; Mahoney, Jouriles, & Scavone, 1997). Conflict within marriages and families is sometimes needed to resolve issues. However, unresolved, escalating, destructive marital conflict may have cumulative effects contributing to the development of behavioural problems and emotional symptoms in children (Davies & Cummings, 1994). Mothers who reported a lower level of marital quality when their child was age 12 months also reported a higher frequency of conduct behaviour problems at age 4 years (Benzies et al., 1998).

Parents who are experiencing conflict in the marital dyad may be less tolerant of their child's behaviour and respond with harsh discipline (Forehand, Brody, & Smith, 1986). This negative reinforcement of aggressive behaviours may lead to childhood behaviour problems (Wilson & Gottman, 1995). Alternatively, children who observe marital conflict may learn vicariously how to behave aggressively (Easterbrooks & Emde,

1988). Marital conflict may have a differential effect on the development of child behaviour problems depending on child gender. Earls (1987) found that marital conflict was significantly related to behaviour problems in boys but not in girls.

In a review of the relationship between marital conflict and child behaviour problems, Davies and Cummings (1994) suggested that child behaviour problems may be the source of marital conflict in some families. Parents living with a child who is engaging in aversive behaviours may receive less support from their spouse for their parenting approaches. Lack of agreement for parenting the child may lead to increased conflict between the spouses (Davies & Cummings). Whether marital conflict within the family predisposes children to behaviour problems, whether behaviour problems influence marital dissatisfaction, or whether both conditions can exist simultaneously remains unclear.

Family Socioeconomic Status

Poverty is known to be an adverse influence on child behavioural development (Cairns et al., 1998; Dodge et al., 1994; John et al., 1995). There is considerable debate over the meaning and measurement of poverty in Canada. The terms poverty and socioeconomic status are often used interchangeably even though each denotes something slightly different in terms of the conditions experienced by children and their families. The term poverty is most frequently equated with a measure of income (Ross & Roberts, 1999). Low income measured annually from birth, was the most powerful correlate of mother-reported behaviour problems in low birth weight, preterm, American children at age five years (Duncan, Brooks-Gunn, & Klebanov, 1994). Duncan and his colleagues

found that the effects of persistent low income in families was 60% to 80% higher than the effects of transient low income. This finding is similar to Bor and his colleagues (1997) who found that the more often families experience low income, the higher the rate of child behaviour problems at age 5 years. In a four year follow-up survey of Canadian children aged 4 to 16 years, low income contributed independently to child behaviour problems (Lipman, Offord, & Boyle, 1994). Residence in neighborhoods with more low income neighbors was related to a concurrently measured increase in the number of externalizing behaviour problems (Deater-Deckard & Dodge, 1997). While Deater-Deckard and Dodge argue that externalizing behaviours may be adaptive in poor neighborhoods with high levels of violence, these behaviours have a negative impact on children's psychosocial development. However, living in a family with low income is not strictly equivalent to living in a family with a low socioeconomic status (Huston, McLoyd, & Coll, 1994).

The term socioeconomic status is usually a composite measure consisting of gender, marital status, years of education, and category of occupation (Hollingshead, 1975). Using the Hollingshead measure, the socioeconomic status of preschool children reliably predicted teacher and peer-rated behaviour problems at school age (Dodge et al., 1994). In a large community sample of kindergarten children, parent education level and occupation significantly contributed to the variance in parent-reported child behaviour problems at first grade (Greenberg, Lengua, Coie, & Pinderhughes, 1999). In another study, Brandt and her colleagues (1992) found that socioeconomic status during the child's first year, as measured by the Hollingshead, was not an important discriminator of

child behaviour problems at age 8 years. Brandt and her colleagues suggest that failure of socioeconomic status to reliably discriminate children with behaviour problems may be related to the failure to consider family income or employment stresses in families.

The precise mechanism by which poverty exerts its negative influence on child behavioural development remains unclear. Three classes of mechanisms have been proposed (Bradley et al., 1994). The first mechanism may be through a lack of adequate food, clothing, and shelter secondary to low income. Lack of resources in the family leads to increased stress and frustration that constrain stimulating and nurturing parenting behaviours. The second mechanism, lack of access to health services, may have less effect on Canadian children who currently have access to publicly funded health care. The third mechanism contributes to behavioural development through unstimulating, unsupportive, and chaotic family environments. All three mechanisms may contribute to poor child behavioural outcomes, but most concede that the quality of the family environment may play the greatest role (Duncan et al., 1994; Pettit et al., 1997).

Poverty creates stress for families that constrains parental capacity to provide stimulating and supportive environments for their children (McLoyd, 1998). In interactions with their children, parents who live in poverty use less reasoning and more harsh discipline (Deater-Deckard & Dodge, 1997). Poverty reduces the likelihood that parents will form supportive marital and extrafamilial networks (McLoyd), decreasing the opportunities for parents to receive emotional, financial, and instrumental support to facilitate effective parenting. However, living in poverty does not uniformly lead to poor behavioural outcomes (Werner, 1994).

In a sample of lone parent families living in poverty, those families who received a supportive parenting intervention in kindergarten had higher levels of maternal proactive teaching, calm discussion in disciplinary encounters, warmth, and interest in the child's activities within the family at sixth grade (Pettit et al., 1997). The outcomes of the supportive parenting intervention seemed to serve as protective factors against the risks associated with certain types of family adversity, such socio-economic disadvantage, family stress, and single parenthood. Pettit and his colleagues found that calm discussion and proactive teaching behaviours by the parents were the best predictors of a child's behaviour and social skillfulness with peers in kindergarten. Thus, in the literature it is suggested that low income and socioeconomic status have an impact on behavioural development. However, it is unclear if low income is a marker for other negative aspects of a child's life, such a low parental education levels, unemployment, inadequate parenting skill, increased stress, and lack of support for parenting.

In summary, substantial evidence exists about the factors that influence child behavioural development. However, this knowledge is inadequate to fully explain the complex interaction between child characteristics and the early family environment that contribute to the development of child behaviour problems and emotional symptoms. Although there is a growing body of evidence about the child personality characteristics associated with prosocial behaviours, there is limited research about how the family environment and child biological characteristics influence prosocial behaviours in young children. Areas that need further research are related to the factors that contribute to stress in families, the aspects of marital quality that make a spousal relationship supportive for

parenting, and the broader social problems that contribute to parental ability to parent their child.

Purpose and Research Questions

The present study was conducted in two phases. The purpose of Phase I was to examine the relationships between early family environment, child characteristics, and child behaviours at age 7 years. Data collected for the Parent-Infant Project (Harrison & Magill-Evans, 1996) at age 3 and 12 months were used in combination with behaviour questionnaires mailed to the mother and father of the child at ages 4 and 7 years. A longitudinal correlational design was used because it allowed the researcher to investigate whether factors in early childhood predict behavioral development in children at age 7 years.

The primary research question for Phase I was: What are the relationships between the independent variables (parenting stress, marital quality, family socioeconomic status, birth status [preterm or term], and child gender) and each of the dependent variables (behaviour problems, emotional symptoms, and prosocial behaviours) at age 7 years? The independent variables included proximal environmental variables (parenting stress and marital quality measured at 3 and 12 months), a distal environmental variable (family socioeconomic status at birth), and child characteristics (birth status and child gender). It was expected that the early family environmental variables would be better predictors of child behavioural development at age 7 years than the characteristics of the child. Supplementary research questions included:

1. Is there a difference in the predictors of conduct behaviour problems, emotional symptoms, or prosocial behaviours depending on whether the mother or father is reporting? It was expected that there would be a difference.
2. Is there a difference between maternal and paternal reports of their children's behaviours at age 7 years? Based on findings with the same sample at age 4 years, it was expected that there would be significant differences.
3. Are parent reports of their child's conduct behaviour problems stable from 4 to 7 years of age? It was expected that parents who reported a high frequency of behaviour problems at age 4 years would report similar behaviours for their child at age 7 years.

The purpose of Phase II was to explore, with mothers and fathers who report a high frequency of conduct behaviour problems, their perceptions of the development of their child's behaviour problems and how they managed parenting. The research question was: How do parents describe their child's behavioural development and the experience of parenting their child? Mothers and fathers who reported scores in the top 20% on the Intensity scale of the ECBI (Eyberg, 1992) participated in individual, semi-structured interviews. It was expected that mothers and fathers would provide information to support the findings from Phase I, as well as provide insight into additional factors associated with the development of behaviour problems and emotional symptoms.

CHAPTER 3

Methods

Both quantitative and qualitative methods were used in this research to expand what is known about the factors that influence behavioral development in young children. A complementary follow-up design was selected (Morgan, 1998). In this design, a smaller qualitative study helps to evaluate and interpret the results from a principally quantitative study. The majority of research on behavioral development has been conducted from a quantitative approach. A quantitative approach considers *a priori* assumptions from the perspective of the researcher about the variables that influence behavioral development. A qualitative approach was used because the literature revealed scant mention of the factors that influence the development of childhood behaviour from the perspective of parents (Kendall, 1998; Mikelson, 2000). The parents' perspectives on the development of their child's behaviour may provide insights into how child characteristics and early family environment interrelate with behavioral development in the child. Therefore the use of a multiple method approach was warranted.

In the remainder of this chapter, the sample, data collection, and data analyses methods for Phase I will be presented. This will be followed by a discussion of the participants, data collection, and data analyses methods for Phase II of the study.

Method for Phase I

Participants in the study were recruited from the Parent-Infant Project, a longitudinal study of mother and father interactions with preterm and term infants (Harrison & Magill-Evans, 1996). The Parent-Infant Project focuses on the prediction of child language and cognitive outcomes from family and individual data.

Sample

At recruitment, the sample consisted of 56 families with a preterm infant and 58 families with a term infant, matched at birth by infant gender and hospital of birth. The infants were recruited between July 1991 and May 1992 from three large urban hospitals in Western Canada. Criteria for inclusion of preterm infants were as follows: (a) gestational age 30 to 36 weeks, (b) birth weight greater than 1500 grams, and (c) healthy at discharge with no major congenital anomalies. All term infants were healthy at discharge. Multiple births were excluded from the sample as well as infants born to mothers with a history of confirmed or suspected substance abuse. Parents were required to read and speak English. At recruitment, parents resided in the same household and lived within one hour's drive of the city of Edmonton.

At 3 months, 108 families remained in the Parent-Infant Project; 103 families remained at 12 months and 4 years. Parent-Infant Project research assistants located 93 families who were willing to participate in the child behaviour study at 7 years (see Appendix A).

Data Collection

Data for Phase I included data previously collected for the Parent-Infant Project at birth (recruitment), 3 months, and 12 months, as well as child behaviour data collected by this researcher at 4 years. General information about the parents, family, and child and data on child behaviours at 7 years were collected for this study. At the time of recruitment to the Parent-Infant Project, demographic information collected by questionnaire included the mother's and the father's age, education level, occupation, income level, and family socioeconomic status. Demographic information for the infants

included gender, gestational age, birth weight, and birth order. Three and 12 months after the infant's discharge from hospital, mothers and fathers independently completed the PSI (Abidin, 1995) and DAS (Spanier, 1989) during a home visit. When the child was 4 years of age, parents were mailed the ECBI. Eighty mothers and 72 fathers completed the ECBI Intensity and Problem scales. These data were available to the researcher as coded Statistical Package for Social Sciences (SPSS) computer files.

For data collection when the child was age 7 years, the researcher provided the Parent-Infant Project research assistant with a letter of introduction from Dr. Harrison, the ECBI and NLSCY questionnaires, a general information questionnaire, a stamped self-addressed envelope, and instructions for the parents on how to complete and return the questionnaires (see Appendix A). If the parents had questions about the study, they were advised to telephone the Parent-Infant Project office. An offer to accept long distance charges for collect calls was included in the letter. The Parent-Infant Project research assistant mailed the questionnaire packages to the families. As data collection for Phase I of this study did not entail personal contact, questionnaires were mailed to families living out of the local geographical region. Both parents in each family were invited to participate, although data from one parent were included in the study if only one parent chose to participate. A returned completed questionnaire implied consent to participate. Mothers and fathers who did not wish to participate were asked to return the questionnaire unanswered in the stamped, self-addressed envelope provided. Approximately 4 weeks after the initial mailing, reminder letters were mailed to those families who had not returned either answered or unanswered questionnaires. The Project research assistant made a telephone contact for non-responses 3 weeks after the reminder

letter was sent. The research assistant provided information about the study and offered a replacement questionnaire in case the first one had been misplaced.

Self-report questionnaires can be brief, acceptable to respondents, unobtrusive, and flexible (Jackson, 1988). Although mailing the questionnaires provides a relatively inexpensive method of contacting parents to collect data, the problem of a low response rate is a concern. According to a formula developed by Heberlein and Baumgartner (1978) to determine response rate for surveys, the estimated response rate for this study should be 64.9% if no "special third contact" (p. 456) is made. Using the special third contact by telephone, a calculated return rate of 90.7% was expected. The actual response rates at age 7 years were lower than estimated for mothers (71%) and fathers (69%).

Instruments

General Information Questionnaire. General information about the parents, the family, and the child was collected from the mothers and fathers by questionnaire (see Appendix B). This information included mother's and father's age, education level, occupation, family income, and partner status, changes in the family composition and family problems, the parent's perception of their child's health and illness, as well as the child's academic and social experiences at school.

Parenting Stress Index. The PSI (Abidin, 1995) is a 101-item, self-report questionnaire designed to identify parent and child characteristics that contribute to family stress and place the family at risk for the development of dysfunctional parenting behaviour or behaviour problems in the child (see Appendix C). The Parent Domain score consists of the sum of seven subscales: depression, attachment, role restriction, competence, social isolation, relationship with spouse, and parent health. The Child

Domain score consists of the sum of six subscales: adaptability, acceptability, demandingness, mood, distractibility/ hyperactivity, and reinforces parent. There are five response categories (strongly agree, agree, not sure, disagree, and strongly disagree) for each item on the questionnaire. The theoretical range of scores is from 54 to 269 for the Parent Domain and from 47 to 233 for the Child Domain. Higher scores indicate greater parenting stress. Parents who report a Parent Domain score above 150 or a Child Domain score above 114 should be considered for referral to professional services (Abidin). The PSI requires approximately 20 minutes to complete. In this study, the Parent Domain and Child Domain scores were used.

Normative data for the PSI were generated from a convenience sample of 2,633 predominantly Caucasian, American mothers (Abidin, 1995). Normative data is available for a small sample (N=200) of fathers. Cronbach's alphas are reported to range from .70 to .84 for the Parent Domain and from .70 to .83 for the Child Domain (Abidin). In the present study, Cronbach's alphas for mothers and fathers at 3 and 12 months ranged from .80 to .86 for the Parent Domain and .80 to .84 for the Child Domain. Abidin reported a test-retest reliability of .91 for the Parent Domain and .63 for the Child Domain across a 1 to 3 month interval.

Dyadic Adjustment Scale. The DAS (Spanier, 1989) is a 32-item self-report instrument designed to measure the quality of adjustment in marriage and similar couple relationships (see Appendix D). Four subscales on the DAS (dyadic consensus, dyadic cohesion, affectional expression, and dyadic satisfaction) are summed to create a total score. The total DAS score was used in the present study. The number of response categories in each subscale varies from 5 to 6 points on a Likert scale. Low scores on the

DAS indicate a problem with the couple relationship, whereas high scores indicate the absence of a problem. The theoretical range of scores is from 0 to 151. Spanier does not provide guidelines for a cut-off point for poor dyadic functioning. Sharpley and Cross (1982) obtained a mean score of 108 for couples in their study. For research purposes, they suggest that this score be used to define high versus low scorers on the DAS.

Spanier (1989) cites a Cronbach's alpha of .96 for the total DAS. In the present study, Cronbach's alphas on the DAS at 3 and 12 months ranged from .88 to .93 for mothers and fathers. Test-retest reliability reported for the total scores over 11 weeks is .96, but is lower over 12 months (.43 to .82) which may reflect change in the dyad over time (Spanier). A cross-spouse correlation of .59 was reported. In the present study, the cross-spouse correlation was .63 at 3 months and .55 at 12 months. A low cross-spouse correlation may reflect areas of discord in the relationship rather than instrument reliability. Construct validity was established through measurement of correlations between the DAS and the Locke-Wallace Marital Adjustment Scale (Locke, 1947), a well-accepted marital adjustment scale. The correlation was .86 among married respondents and .88 among divorced respondents ($p < .001$; Spanier, 1976). A factor analysis demonstrated that the four subscales accounted for 94% of the covariance among the items (Spanier & Thompson, 1982). DAS scores correlate with measures of poor marital functioning, depression, poor communication, and behaviour problems in children (Spanier, 1989).

ECBI. The ECBI (Eyberg, 1992) is a parent-report questionnaire designed to assess conduct problem behaviours in children aged 2 to 17 years (see Appendix E). The 36 items assess conduct problems on two dimensions, the frequency of behaviour

occurrence (Intensity scale) and the impact of the child's behaviour on the rater (Problem scale). The behaviour frequency ratings on the Intensity scale are arranged on a Likert scale from never (1) to always (7). The ratings are summed to yield an Intensity score that has a theoretical range from 36 to 252. Higher scores indicate more conduct problem behaviours. The suggested cut-off for the clinical range on the ECBI Intensity scale is 127. The ECBI Problem score results from the parent answering "yes" or "no" to the question "Is this behaviour a problem for you?" The total Problem score (theoretical range from 0 to 36) is the sum of the total "yes" responses. Again, higher scores on the Problem scale indicate more child behaviours that have an impact on the rater. ECBI Problem scores above 11 are considered to be in the clinical range. The ECBI takes approximately 10 minutes to complete. The ECBI Intensity and Problem scales were used in this study.

The ECBI was standardized with 512 children between the ages of 2 and 12 years who attended a pediatric clinic over a period of three months (Robinson et al., 1980). The mean split-half correlation for the Intensity scale is reported as .95 and .94 for the Problem scale (Eyberg, 1992). Cronbach's alpha of .98 for the Intensity scale and the Problem scale indicates that both scales have internal consistency. For the present study, the Cronbach's alpha ranged from .91 (mothers) to .93 (fathers) on the Intensity scale and was .82 (mothers and fathers) on the Problem scale. Test-retest correlations over 21 days were .86 for the Intensity scale and .88 for the Problem scale (Robinson et al.).

Validity has been established primarily through factor analytic studies. The original normative studies described the ECBI as a unidimensional measure of conduct problem behaviour (Eyberg & Ross, 1978). Burns and Patterson (1991) challenged the

unidimensional nature of the ECBI. In a factor analysis they identified the dimensions of oppositional defiant disorder, conduct disorder, and attention-deficit/hyperactivity disorder. The long-range predictive validity of the ECBI has not been provided.

The discriminant validity of the ECBI has been supported in studies of young children with conduct behaviour disorders (Eyberg & Ross, 1978). The scores on the ECBI Intensity and Problem scales correlate significantly with direct observational measures of non-compliance and negative parent child interactions (Webster-Stratton, & Eyberg, 1982). The ECBI scores were significantly correlated with both the Internalizing and Externalizing scales of the CBCL (Achenbach, 1978), although a higher correlation was demonstrated with the Externalizing scale (Eyberg, 1992).

The CBCL was considered for use in this study as the measure of behaviour problems as is reported to be the most well developed and frequently cited behaviour disorder measure (Barkley, 1988). However several characteristics of the CBCL limits its usefulness. First, standardization of raw scores to T-scores involves compressing the scores within the normal range so that all raw scores below the 69th percentile are assigned the same score (Perrin, Stein & Drotar, 1991). T-scores provide limited variability in scores within the normal range of scores, which would be expected in a community sample such as the Parent-Infant Project. Second, the factor structure of the CBCL is not stable across different age and gender groupings. In order to use the factor scores, children with similar age and gender must be compared separately (Costello, 1997). This characteristic of the CBCL creates difficulties when comparing children's scores in longitudinal research. Finally, the CBCL scores for children with chronic illness are consistently higher than scores for healthy children due to the inclusion of questions

related to physical health (Perrin et al.). ECBI scores for children with chronic illness have not differed from scores of the non-chronically ill, except when children have restricted behavioural repertoires due to severe physical or language impairments (Eyberg, 1992). The Parent-Infant Project sample includes children born preterm who have an increased risk for chronic health problems. Therefore, in a longitudinal study of a community sample of preterm children the ECBI is a more suitable measure of conduct behaviour problems.

The ECBI does not include a measure of emotional symptoms. Some researchers suggest that children born preterm, particularly the very preterm and small for gestational age preterm children, are more likely to experience anxiety/emotional symptoms than conduct behaviour problems (Schothorst & vanEngeland, 1996). For this reason, a measure of emotional symptoms was added at 7 years of age.

NLSCY Emotional Symptoms Scale. The NLSCY is a prospective, longitudinal survey of Canadian children and youth. Included in the NLSCY are nine items designed to measure emotional symptoms in children aged 4 to 11 years (see Appendix F). Responses to the NLSCY Emotional Symptoms items are reported as frequencies of the responses "never or not true", "sometimes or somewhat true", and "often or very true". The theoretical range of scores is from 0 to 18. No clinical cut-off scores have been established for the NLSCY Emotional Symptoms scale. The Expert Advisory Group who developed the NLSCY behaviour item pool recommended that the top 10% of children in a population would be a reasonable estimate of the number of children with a specific problem (personal communication, Y. Claremont, November 3, 2000). Cronbach's alpha for the Emotional Symptoms scale reported in the NLSCY User's Handbook and

Microdata Guide (Statistics Canada/Human Resources Development Canada, 1995) is .79. For the present study, Cronbach's alphas were .74 for the mothers and .63 for the fathers. There is no information available on test-retest reliability or concurrent validity (Y. Claremont, personal communication November 3, 2000). In a pilot study, the Emotional Symptom scale took approximately 4 minutes to complete.

NLSCY Prosocial Behaviour Scale. The 10 item NLSCY Prosocial Behaviour scale was adapted from the 20 item Prosocial Behaviour Questionnaire (PBQ; Weir & Dunveen, 1981) and added to the NLSCY behaviour item set to broaden the base of child behaviours measured (see Appendix F). The PBQ was designed to be completed by teachers of children ranging from 5 to 11 years of age; the NLSCY Prosocial Behaviour scale was administered to the person most knowledgeable about the child, usually the mother. A three-point rating scale with the responses "never or not true", "sometimes or somewhat true", and "often or very true" are summed to derive a total score with a theoretical range of 0 to 20. A higher score on the NLSCY Prosocial Behaviour scale represents a greater frequency of prosocial behaviours. A Cronbach's alpha of .82 was reported for the NLSCY Prosocial Behaviour items in the NLSCY User's Handbook and Microdata Guide (Statistics Canada/Human Resources Development Canada, 1995). For the present study, the Cronbach's alphas were .81 for the mothers and .87 for the fathers. There is no information about test-retest reliability or concurrent validity for the NLSCY Prosocial Behaviour scale (Y. Claremont, personal communication November 3, 2000). In a pilot study, the Prosocial Behaviour scale took approximately 4 minutes to complete.

There are several advantages to using the NLSCY Emotional Symptoms and Prosocial Behaviour scales. First, the NLSCY provides normative data for each scale.

Second, the use of the NLSCY scales allows for comparability of the findings from the present study to a representative sample of Canadian children. Finally, the constructs represented by the Emotional Symptoms and Prosocial Behaviour scales are clearly identified and are intended to measure child behaviours not addressed by the ECBI. Therefore the NLSCY Emotional Symptoms and Prosocial Behaviour scales were included as measures in the present study.

Data Analyses

Data from the mothers and fathers were entered and analyzed separately using the SPSS (Version 7.5) software program. Prior to analyses, data were examined for missing data and patterns of missing data. Eyberg (personal communication, April 13, 1996) replaces any missing data on the ECBI with "1" and discards questionnaires with more than 5 missing items. At the 4-year data collection point, there were 54 missing responses out of total of 11,088 items and no questionnaires contained more than five missing items. At 7 years there were 27 missing responses out of a total of 10,244 items and no questionnaires with greater than 5 missing items on a completed scale. The missing values on the ECBI for items regarding behaviours toward siblings (where none existed) were replaced with "1". All other missing data were replaced with the mean for that item for the child's birth status, preterm or term. This approach to replacing missing values was used at the 4-year data collection point and provides a conservative estimate of the missing value.

The averages of the 3 and 12 month scores on the PSI and DAS for each parent were used instead of separate scores. Garmezy and Masten (1994) suggest that an average of scores at multiple time points may be a better predictor of outcomes than one score

from any particular point in time because the chronicity of environmental problems may have a greater influence in determining child developmental outcomes than intermittent, acute problems. Averaging may sacrifice some variability in the scores. Bivariate correlations of the 3 and 12 month scores show that these scores are moderately stable over time. Correlations for the maternal 3 and 12 month PSI Parent Domain, PSI Child Domain, and DAS scores were .67, .51, and .89, respectively. Correlations for the paternal 3 and 12 month PSI Parent Domain, PSI Child Domain, and DAS scores were .68, .28, and .80, respectively. The lower correlations for the PSI Child Domain score as reported by both mothers and fathers may reflect changes in child behaviours over time (Abidin, 1995).

The low correlation (r = .28) between the 3 and 12 month PSI Child Domain scores raised concerns about the wisdom of using the average of the 3 and 12 month scores as a predictor for fathers. Perhaps either the 3 month or the 12 month Child Domain score would be a better predictor of child behaviours than the average score. Further examination of each of the fathers' Child Domain scores and the dependent variables revealed only one correlation that approached statistical significance. The correlation between the average 3 and 12 month Child Domain score and the ECBI Problem scale was .24 (p = .07). All other correlations between the fathers' Child Domain scores at the individual time points and the dependent variables were less than .20 and non-significant. As the strongest, albeit non-significant correlation, existed between the average Child Domain score and at least one of the dependent variables, it was decided to used the average score. Additionally, this decision maintained comparability between the predictors for mothers and fathers.

Where both parents continued to reside in the same household, family socioeconomic status was calculated by averaging the Hollingshead scores for the mother and the father. In lone parent families, the Hollingshead score for the residential parent was used.

Means, standard deviations, ranges and frequencies were used to describe the continuous or categorical variables, as appropriate. The characteristics of the children, including gender and birth status (term or preterm) were analyzed using chi-square tests. The 1% confidence level was used to determine the statistical significance when multiple comparisons were used. Scatter plots, histograms, and Q-Q plots were used to explore the scores on the PSI, DAS, ECBI, and the NLSCY Emotional Symptoms and Prosocial Behaviour scales for the samples of mothers and fathers and to determine normality of distribution, linearity, and homoscedasticity. Outliers were retained in the analyses because those cases are considered clinically significant. The potential for multicollinearity between independent variables was examined using tolerance levels and variance inflation factor. Paired t-tests were used to compare mother and father responses for the same child. Independent t-tests or MANOVA were used for all other comparisons. The stability of child behaviour scores between 4 and 7 years and strength and direction of relationships between the independent variables and the dependent variables were examined using the Pearson product-moment correlation.

Multiple regression using a hierarchical method was used to determine which independent variables (PSI Parent Domain, PSI Child Domain, DAS, family socioeconomic status, infant birth status, and child gender) best predict child behaviours (ECBI Intensity and Problem scores, and the NLSCY Emotional Symptoms and Prosocial

Behaviour scores). A hierarchical method was chosen because a set of theoretically derived predictor variables, judiciously selected, adheres to the scientific principle of parsimony and reduces the potential for multicollinearity among predictors (Tabachnick & Fidel, 1996). Based on the convention for sample size of 10 cases per independent variable (Darlington, 1990), the sample size for mothers (N=62) was adequate for 6 variables, but findings for the sample of fathers (N=56) need to be interpreted cautiously.

In all regression models, the proximal environmental variables, parenting stress (average PSI Parent Domain and average PSI Child Domain soccer) and marital quality (average DAS scores) were entered first. These were followed by the distal environmental variable (family socioeconomic status). The child characteristics (infant birth status and child gender) were entered last. The order of entry for the variables was chosen to determine if the child characteristics would add anything additional to the amount of variance already explained by the family environmental variables. All regression models were run separately for the mothers and the fathers. There were four regression models for each parent, one for each of the ECBI scales, and one for each of the NLSCY scales. When the regression analyses were complete, the regression models for the mothers and fathers were compared for similarities and differences in predictor variables.

Method for Phase II

The perspectives of a subset of parents in the Parent-Infant Project were explored during semi-structured, in-depth interviews. A purposive sample of parents provided an emic perspective on how they perceived their child's behavioural development and how they experience and manage their child's behaviours.

Participants

The letter accompanying the questionnaire sent to parents in Phase I advised that some parents would be contacted for additional information. Parents in families where at least one parent reported an ECBI Intensity score that fell in the top 20% for the sample were contacted by the Parent-Infant Project research assistant. Parents were asked if they were interested in participating in individual interviews to provide further information about their child's behavioural development and their experience of parenting their child. If parents indicated an interest, the Project research assistant gave their names and telephone numbers to the researcher. The researcher then contacted the parents to further explain the study and arrange the interviews. In order to promote maximum variation in the data, the researcher selected participants who varied on age, education level, and socioeconomic status. Both parents in the four families who were selected to participate agreed to be interviewed. In the present study, only eight interviews were conducted because of time and resource limitations.

Data Collection

Once a parent consented to participate in the study, a mutually agreed upon time and place was arranged for an interview. The mother and father in each family were interviewed separately at different times. The majority of the interviews took place in the family home. One interview was conducted in the researcher's office and one at a participant's workplace. Prior to the interview, the researcher presented a detailed explanation of the study and provided an opportunity for the participants to ask questions (see Appendix G). A signed consent form was obtained from each participant (see Appendix H). The researcher provided information about the format of the interview and

advised the parent that he or she would be asked at the end of the interview to verbally re-affirm consent to participate.

The interviews took from 1 to 2 ½ hours and were audiotaped. Sufficient time was allotted to establish rapport with the participant prior to the taped interview and to allow for closure when the interview was completed. Immediately following the interview, the researcher audiotaped observations describing the context of the situation, impressions of the parent's participation, and non-verbal behaviours.

The semi-structured interview questions were devised to elicit the parent's perceptions of parenting a child with conduct behaviour problems (see Appendix I). The interview questions were based on the child characteristics and family environmental variables examined in Phase I of the study. The questions were broad enough to allow the parent's own perceptions of their experience of parenting and their child's behaviour to emerge (Morse & Field, 1995). The interview questions were sequenced so that they flowed from the general to the specific (Hutchinson & Wilson, 1992). The research questions further evolved and were refined as data from each subsequent interview were compared with those conducted previously.

Data Analysis

Demographic information about the parents collected during Phase I of the study (age, education, marital status, and ages and current residence of children) was used to describe the participants in Phase II. The interviews and field notes were transcribed verbatim. The researcher reviewed the transcriptions for accuracy and made corrections. Data analysis was an iterative process whereby the researcher reviewed audiotapes prior

to subsequent interviews to identify themes and patterns that required more in-depth exploration.

A thematic analysis was conducted. A theme is a name for what a data segment is about (Tesch, 1988). Initially, a line-by-line approach was used to identify meaning generated from sentence-size portions of the data. The line-by-line approach is likened to surveying "where the researcher looks at each square inch of her territory and tries to capture what is there, making sure that nothing is overlooked"(Tesch, p. 232). Through comparisons of how the mother and father of each child experience parenting, underlying themes emerged from the data. As the analysis proceeded, themes were named and expanded or collapsed to accommodate the conceptualization of parenting a child with behaviour problems. The data were analyzed to identify relationships among the themes and to develop an understanding of how parenting differs depending on the behaviours exhibited by the child. However, the line-by-line approach did not provide a great deal of insight into the experience of parenting a child with behaviour problems. The initial themes emerging from the data were particulate, child behaviour focused, and did not accurately represent the family level data that the parents provided. Following a consultation about the data and the process of thematic analysis, the researcher set aside the initial analysis and re-immersed herself in the data as a whole.

A second approach to analysis was undertaken with larger segments of data examined in the context of a broader family level. Tesch (1988) refers to this approach as "panning" where "the researcher looks for precious elements, which take the form of descriptive expressions in the material that are at the 'center of the experience'.... All other ingredients are sifted out." (p. 232). Common and unique themes were identified

among the interviews. Data analysis was facilitated through the use of writing memos throughout the process. Theoretical memos were used to document insights and ideas about the data; process memos were used to record decision-making regarding the analysis.

The Non-numerical Unstructured Data Indexing Searching and Theory-building (NUD*IST; 1997) Revision 4 computer software program was used to manage the data during the process of analyzing the interviews. NUD*IST software was chosen to assist with analysis because it facilitates the identification and naming of themes (Miles & Weitzman, 1994). Once named, the data segments are easily found and displayed. NUD*IST also facilitated the use of theoretical and process memos.

Methodological rigor for Phase II of the research was addressed using the criteria of credibility, fittingness, auditability, and confirmability (Sandelowski, 1986). A qualitative study has credibility or truth-value when representative descriptions of the experiences of the participants are the result of the research. By creating an atmosphere of trust, sensitivity, and authenticity during the interviews, it was hoped that the parents related their experiences in an open, honest manner that enhanced the credibility of the findings.

Once the major categories were established, the researcher returned to the literature to verify if the results of this study are consistent with what other researchers suggest about parenting children with conduct behaviour problems. Several times during the data analysis, the researcher presented the analysis to a qualitative research expert to explore potential sources of researcher bias and to clarify and confirm the interpretations generated from the data. The consultation process entailed reviewing all the transcripts

and checking the themes and categories against the data to ensure that the researcher describes the participant's experiences in an accurate, complete, and meticulous manner.

Fittingness is evaluated by determining if the findings of the study fit in similar contexts. This process was addressed when the findings were compared to research with other samples of parents of school age children with behaviour problems (Kendall, 1998; Mikelson, 2000).

Auditability allows another researcher to clearly follow the decisions made by the researcher carrying out the study. The audit trail for this study included both theoretical memos that document researcher reflections and insights and process memos to document researcher actions and decision paths regarding the study. When the criteria of credibility, fittingness, and auditability are established, the research has confirmability. In this study, these criteria were met and constitute methodological rigor.

Integration of Findings from Phase I and Phase II

Cook and Campbell (1979) describe mono-method bias as a threat to construct validity. The validity of a construct is difficult to differentiate from its mono-method operational definition. To reduce the threat of mono-method bias, this study included a predominant quantitative (Phase I) and a subsidiary qualitative (Phase II) component. Priority and sequencing of the methods does not mean that one method is more highly valued or deserves more time and effort. Each method was equally valued and the unique contributions of each are recognized in the integration of the findings. Convergent findings across studies may corroborate or confirm previous research. Divergent findings may suggest that one set of findings is inadequate, incomplete, or inaccurate and requires additional research to clarify the results. Upon completion of the data analyses for Phase I

and Phase II, findings were compared at the level of theoretical construct for similarities and differences.

Protection of Human Subjects

The Joint Ethical Review Board of the University of Alberta and Capital Health Region approved the research protocol of this study. The list of Parent-Infant Project family names and identifying data are in the possession of the co-investigators, Drs. Harrison and Magill-Evans. In Phase I, the researcher conducting the present study did not have access to participants' names. The Project research assistant updated contact information for participants in the Parent-Infant Project (see Appendix A for correspondence with parents), mailed questionnaires, and reminder letters, and contacted parents by telephone. Consent to participate was implied when questionnaires were completed and returned. The researcher had access to the questionnaires identified only by a research code number. The same research code number identified data for each participant in the computer files of data collected at 3 and 12 months and 4 years.

In Phase II, the Project research assistant made the initial contact with the eight parents identified as potential participants. When the parents indicated a willingness to be interviewed, their names and phone numbers were given to the researcher. Prior to each interview, informed consent to participate was obtained from the parents. The procedure for informed consent was described earlier in this chapter. The participants were given an information sheet about the purpose of the study (see Appendix G) and a copy of the consent form (see Appendix H).

There were no expected risks or benefits to the parents and children who participated in the study. In previous research studies, participants have stated it is

valuable to share their experiences in the belief that they will help others (Hutchinson, Wilson, & Wilson, 1994). Any parent who reported scores above the clinical cutoff on the ECBI Intensity scale (127) or Problem scale (11) was contacted as soon as possible and referred to community resources for families of children with behaviour problems if they were interested and not receiving services already. The participants were assured of confidentiality, except in the event that professional codes of ethics and/or legislation require reporting. During the interviews none of the participants shared information that required reporting. Participants who chose to receive a summary of the research results left a message on the Parent-Infant Project answering machine with an address to which the summary could be mailed.

CHAPTER 4

Findings from Phase I

Presentation of findings for Phase I begins with a description of the sample and is followed by the scores on the predictor variables and the behaviour measures. The results of the regression analyses, t-tests, and correlations as they relate to each research question conclude the findings.

Sample

When the children were age 7 years, the final sample included 62 families with behaviour data for 62 mothers and 56 fathers. There were 56 families for whom data were available for mothers and fathers of the same child. One father, who returned an answered questionnaire, omitted the ECBI Problem scale. Data from the ECBI Intensity scale and the NLSCY Emotional and Prosocial Behavior scales for this father were included in the study. There were 47 families for whom complete data were available for mothers and fathers of the same child at 4 and 7 years. Seven fathers who responded at 4 years did not return completed questionnaires at 7 years. Two fathers omitted the ECBI Problem scale, one at 4 years and one at 7 years.

Of the families who dropped out of the study, the majority cited busy schedules as the reason they were no longer able to participate. One family was lost to follow-up contact. Using data collected at the time of the child's birth, MANOVA and chi-square were used to examine differences in age, education level, occupation, and family socioeconomic status for mothers and fathers who participated in the study at 7 years and those who dropped out after data collection at 12 months. There was a significant difference on maternal age and education level. Mothers who participated at 7 years were

older $F(1,102) = 4.37$, $p = .04$) and reported more years of education ($F(1,102) = 4.29$, $p = .04$) than mothers who dropped out after 12 months. Mothers who participated at 7 years were similar to mothers who dropped out in terms of maternal occupation and family socioeconomic status. Fathers who participated at 7 years were significantly older ($F(1,102) = 5.64$, $p = .02$) than fathers who dropped out after 12 months. No significant differences were found between participating and non-participating fathers in paternal education, occupation, or family socioeconomic status.

The means and standard deviations for age, education, occupation, and family socioeconomic status for the sample of mothers and the sample of fathers who participated at 7 years are presented in Table 1. Compared to an average number of years of education (13.3 years) for an Alberta woman between the age of 35 to 44 years (Statistics Canada, 1996), the sample of mothers had, on average, almost 2 years more formal education (15.16 years). The occupation level for the sample of mothers ranged from menial service workers (Hollingshead Class 1) to major professionals (Hollingshead Class 9). For both the samples of mothers and fathers, the Hollingshead scores ranged from 27 to 66. Compared to an average number of years of education (13.6 years) for an Alberta man between the age of 35 and 44 years (Statistics Canada), the sample of fathers had, on average, almost 2 years more formal education. The occupation level for the sample of fathers ranged from unskilled workers (Hollingshead Class 2) to major professionals (Hollingshead Class 9).

Child gender, birth status, and birth order for both the samples of mothers and fathers are presented in Table 2. The mean age of the children at the 7 year data collection point was 7.4 years (SD = .30). All but three children continued to live in two

parent families. More fathers of children born at term participated than fathers of children born preterm ($\chi^2 = 6.85$, df = 1, p=. 01). While there were more children who were born at term than preterm in the sample of mothers, this difference was not significant. For both the samples of mothers and fathers, the proportion of those who had sons or daughters or first born or later born children was not significantly different. The number of children living in the family home varied from one to five. The majority of children lived in a family with 2 children (53.2%). At the 7-year data collection point, 53% of the children were in Grade 1 and 47% were in Grade 2. Parents of three children reported that their child had repeated either kindergarten or Grade 1. Of the children who repeated a grade, two mothers and one father reported a frequency of conduct behaviour problems above the ECBI clinical cut-off score at 7 years.

Table 1

Age, Education, Occupation, and Family Socioeconomic Status for Samples of Mothers and Fathers

	Mothers (N=62)		Fathers (N=56)	
	Mean (SD)	Range	Mean (SD)	Range
Age (years)	37.68 (5.07)	28-51	40.20 (5.77)	28-55
Education (years)	15.16 (3.08)	9-24	15.50 (3.92)	9-28
Occupation [a]	21.13 (15.98)	0-45	31.16 (9.68)	0-45
Family SES [a]	46.6 (9.92)	27-66	47.10 (10.11)	27-66

Note. [a] Hollingshead Four Factor Index. SES = Socioeconomic status.

Table 2

Child Gender, Birth Status, and Birth Order for Samples of Mothers and Fathers

	Mothers (N=62) Frequency (%)	Fathers (N=56) Frequency (%)
Boys	37 (60%)	33 (59%)
Preterm	25 (40%)	20 (36%)
First born	31 (50%)	26 (47%)

Scores on the Predictor Variables and Child Behaviour Measures

The scores for mothers and fathers on the PSI, DAS, ECBI, and NLSCY Emotional and Prosocial Behaviour scales are presented in Table 3. Overall, the mean scores for mothers and fathers on the PSI, DAS, and ECBI fell within the recommended non-clinical range of values. As specified previously, the clinical cut-offs for these scales are as follows: PSI Parent Domain > 150; PSI Child Domain > 114; DAS < 108; ECBI Intensity scale > 127; ECBI Problem scale > 11. There is no recommended clinical cut-off reported for either the NLSCY Emotional Symptoms scale or the Prosocial Behaviour scale (Human Resources Development/Statistics Canada, 1996). In a community sample, the top 10% of scores are considered in to be in the clinical range. As specified previously, the NLSCY Emotional Symptom scores range from 0 to 18 and NLSCY Prosocial Behaviour scores range from 0 to 20.

Table 3

Scores on the Predictor Variables and Child Behaviour Measures for Mothers and Fathers

	Mothers (N=62)		Fathers (N=56)	
	Mean (SD)	Range	Mean (SD)	Range
PSI Parent Domain	119.18 (17.47)	81-178	115.91 (18.08)	77-166
PSI Child Domain	94.94 (13.09)	68-124	98.61 (12.20)	76-122
DAS	113.13 (14.41)	52-134	113.80 (10.37)	76-131
ECBI Intensity	98.27 (23.66)	48-149	101.23 (26.04)	44-163
ECBI Problem [a]	5.55 (5.52)	0-22	4.85 (5.72)	0-20
NLSCY Emotional	3.26 (2.55)	0-14	3.96 (2.30)	0-9
NLSCY Prosocial	14.03 (3.33)	5-20	12.59 (3.81)	2-20

Note. PSI= Parenting Stress Index. DAS= Dyadic Adjustment Scale. ECBI= Eyberg Child Behavior Inventory. NLSCY= National Longitudinal Survey of Children and Youth. [a] N = 55 for fathers.

Inter-correlations and Correlations between Mothers' scores on Child Behaviour Measures and the Predictor Variables

Inter-correlations and correlations between the behaviour measures and the predictor variables for mothers are presented in Table 4. The inter-correlations between the mothers' scores on ECBI Intensity and Problem scores and the ECBI Intensity and NLSCY Prosocial Behaviour scores are statistically significant and in the expected direction. The inter-correlations between the mothers' scores on the ECBI Intensity and Problem scales and the NLSCY Emotional Behaviour scale were weak, but in the expected direction. Statistically significant positive correlations are evident between the ECBI Intensity and Problem scores and the PSI Parent Domain and Child Domain scores. All other relationships between child behaviour measures and predictor variables are non-significant. Inverse relationships are evident between the ECBI Intensity and Problem

scores and the DAS. A positive relationship exists between the NLSCY Prosocial Behaviour Scale and the DAS.

Table 4

Inter-correlations and Correlations between Mothers' Scores on the Child Behaviour Measures and Predictor Variables (N = 62)

		Correlations								
		2	3	4	5	6	7	8	9	10
1.	ECBI Intensity	.65**	.31	-.41*	.34*	.36*	-.32	-.15	-.07	-.13
2.	ECBI Problem		.24	-.14	.37*	.34*	-.22	-.21	-.06	.00
3.	NLSCY Emotional			-.11	.19	.15	-.18	-.12	.06	.07
4.	NLSCY Prosocial				-.14	-.07	.23	.04	-.05	.30
5.	PSI Parent Domain					.57**	-.49**	-.34*	-.05	.23
6.	PSI Child Domain						-.24	-.13	-.18	.19
7.	DAS							.17	.07	-.01
8.	Family SES								.09	-.08
9.	Birth Status									.00
10.	Child Gender									

Note. ECBI = Eyberg Child Behavior Inventory. NLSCY = National Longitudinal Survey of Children and Youth. PSI = Parenting Stress Inventory. DAS = Dyadic Adjustment Scale. SES = socioeconomic status. * $p < .01$. ** $p < .001$.

Inter-correlations and Correlations between Fathers' Scores on the Child Behaviour Measures and Predictor Variables

The inter-correlations and correlations between the child behaviour measures and the predictor variables for fathers are presented in Table 5. The inter-correlations between the fathers' scores on the ECBI Intensity and Problem scale and the ECBI Intensity and the NLSCY Prosocial Behaviour scale were statistically significant and in the expected direction. The inter-correlations between the fathers' scores on the ECBI scales and the NLSCY Emotional Symptom scale were weak, but in the expected direction. Correlations between all child behaviour measures and predictor variables are weak in magnitude with no significant relationships. The direction of the relationships between the ECBI Intensity

score and the PSI Parent Domain score, and the NLSCY Prosocial Behaviour score and the PSI Parent Domain score, were in the direction opposite to what was expected.

Table 5

Inter-correlations and Correlations between Fathers' Scores on the Child Behaviour Measures and Predictor Variables (N = 56)

		Correlations								
		2	3	4	5	6	7	8	9	10
1.	ECBI Intensity	.58**	.32	-.46**	-.10	.06	-.21	-.01	-.01	-.03
2.	ECBI Problem [a]		.25	-.25	.08	.24	-.04	-.04	.02	-.03
3.	NLSCY Emotional			-.25	.06	.14	.04	-.14	-.04	-.02
4.	NLSCY Prosocial				.25	.18	.07	-.18	-.20	.20
5.	PSI Parent Domain					.67**	-.52**	-.12	.06	.32
6.	PSI Child Domain						-.17	-.09	-.18	.35*
7.	DAS							-.01	-.07	-.03
8.	Family SES								.09	-.08
9.	Birth Status									.00
10.	Child Gender									

Note. ECBI = Eyberg Child Behavior Inventory. NLSCY = National Longitudinal Survey of Children and Youth. PSI = Parenting Stress Inventory. DAS = Dyadic Adjustment Scale. SES = socioeconomic status.
[a] N= 55. * $p < .01$. ** $p < .001$.

Data Screening for Multiple Regression Analyses

Data for the regression analyses were explored prior to conducting the regression analyses according to conventions described by Tabachnick and Fidell (1996). Examination of residual scatter plots revealed that except for the ECBI Problem scores for both mothers and fathers and the NLSCY Emotional Symptom scores for mothers, the residuals were approximately normally distributed. A linear relationship between predicted dependent variable scores and errors of prediction was demonstrated. The variance of the residuals about the predicted dependent variable scores is approximately the same (homoscedasticity). Further screening of the mothers' and fathers' ECBI Problem scores and the NLSCY Emotional Symptom scores revealed minor deviations

from a straight line on a normal probability plot of residuals, particularly for the fathers' ECBI Problem scores. Frequency histograms of the mothers' and fathers' ECBI Problem scores and the mothers' NLSCY Emotional Symptom scores revealed positively skewed distributions. Regression solutions for these dependent variables should be interpreted cautiously.

In some regression solutions, little or none of the total variance is explained by the predictor variables and the F of the equation for the model is non-significant. These regression models are considered unstable. In some of these unstable regression solutions, SPSS calculated beta coefficients that reached statistical significance. Where the F of the regression model is not significant, beta coefficients for these models will be considered non-significant because the solution is considered unstable.

Hierarchical Regression for Variables Predicting Maternal Scores on the Child Behaviour Measures

ECBI Intensity Score

Maternal PSI Parent Domain, PSI Child Domain, and DAS scores in combination explained only 15% of the variance in ECBI Intensity scores with no statistically significant predictors (see Table 6). There was no increase in the variance explained when family socioeconomic status, birth status, and child gender were added as predictors. The PSI Child Domain score consistently contributed the greatest beta weight to the model. The DAS made a greater contribution than the PSI Parent Domain score.

Table 6

Hierarchical Regression Analysis for Variables Predicting the ECBI Intensity Scores for Mothers (N=62)

	R	Adj. R^2	F of Equation	R^2 Change	Betas		
					Step 1	Step 2	Step 3
Step 1							
PSI Parent Domain					.10	.08	.13
PSI Child Domain					.25	.25	.27
DAS	.44	.15	4.53**	.19**	-.21	-.21	-.18
Step 2							
Family SES	.44	.14	3.40*	.00		-.06	-.06
Step 3							
Birth Status							-.00
Child Gender	.49	.15	2.81*	.04			-.21

Note. PSI= Parenting Stress Index. DAS= Dyadic Adjustment Scale. SES= socioeconomic status.
*p < .05. **p <.01.

ECBI Problem Score

Maternal PSI Parent Domain, PSI Child Domain, and DAS scores in combination explained only 12% of the variance in ECBI Intensity scores with no statistically significant individual predictors (see Table 7). Family socioeconomic status, birth status, and child gender provided no statistically significant additional contribution over what was explained in Step 1. The PSI Parent Domain and PSI Child Domain consistently contributed to the amount of variance explained.

Table 7

Hierarchical Regression Analysis for Variables Predicting the ECBI Problem Scores for Mothers (N=62)

	R	Adj. R^2	F of Equation	R^2 Change	Betas		
					Step 1	Step 2	Step 3
Step 1							
PSI Parent Domain					.23	.19	.21
PSI Child Domain					.19	.20	.21
DAS	.41	.12	3.84*	.17*	-.06	-.07	-.05
Step 2							
Family SES	.42	.12	3.06*	.01		-.11	-.11
Step 3							
Birth Status							.01
Child Gender	.43	.10	2.09	.01			-.10

Note. PSI= Parenting Stress Index. DAS= Dyadic Adjustment Scale. SES= socioeconomic status.
* $p < .05$.

NLSCY Emotional Symptoms Score

Maternal PSI Parent Domain, PSI Child Domain, and DAS scores in combination did not explain any of the variance on the NLSCY Emotional Symptoms score (see Table 8). The addition of family socioeconomic status, birth status, and child gender resulted in negative adjusted R^2 values. The negative adjusted R^2 values in Step 2 and Step 3 of this model means that the predictors in the model are not describing the variability in response and as such are uninterpretable. The reasons for the uninterpretable adjusted R^2 values may be related to insufficient sample size for the number of predictors included in the model. However, the same predictors explained a limited amount of variance in the frequency of behaviour problems. Alternatively, the negative adjusted R^2 values may result from fitting a linear regression model when in fact the model should be curvilinear. The scatter plots for the NLSCY Emotional Behaviour

scores revealed only a minor deviation from a straight line on a normal probability plot of residuals.

Table 8

Hierarchical Regression Analysis for Variables Predicting the NLSCY Emotional Scores for Mothers (N=62)

	R	Adj. R^2	F of Equation	R^2 Change	Betas		
					Step 1	Step 2	Step 3
Step 1							
PSI Parent Domain					.09	.07	.05
PSI Child Domain					.07	.07	.09
DAS	.22	.00	1.00	.05	-.12	-.12	-.13
Step 2							
Family SES	.23	-.01	.80	.00		-.07	-.08
Step 3							
Birth Status							.09
Child Gender	.25	-.04	.61	.01			.04

Note. PSI= Parenting Stress Index. DAS= Dyadic Adjustment Scale. SES= socioeconomic status.

NLSCY Prosocial Behaviour Score

For the mothers, the combination of the PSI Parent Domain score, the PSI Child Domain scores, and the DAS did not explain any of the variance in NLSCY Prosocial behaviour scores (see Table 9). The addition of family socioeconomic status did not contribute anything additional to the model. However, the addition of birth status and child gender to the model increased the variance explained from 0 to 7% on the NLSCY Prosocial scale (R^2 change F=3.62, p= .03). Child gender significantly contributed to the amount of variance (p = .01). The higher the maternal score on the NLSCY Prosocial behaviour scale, the more likely the child was girl.

Table 9

Hierarchical Regression Analysis for Variables Predicting the NLSCY Prosocial Behaviour Scores for Mothers (N=62)

	R	Adj. R^2	F of Equation	R^2 Change	Betas Step 1	Betas Step 2	Betas Step 3
Step 1							
PSI Parent Domain					-.04	-.05	-.12
PSI Child Domain					.01	.01	-.03
DAS	.23	.01	1.12	.05	.21	.21	.17
Step 2							
Family SES	.23	-.01	.83	.00		-.02	-.01
Step 3							
Birth Status							-.08
Child Gender	.41	.07	1.81	.11*			-.34*

Note. PSI= Parenting Stress Index. DAS= Dyadic Adjustment Scale. SES= socioeconomic status.
*$p < .05$.

Hierarchical Regression for the Variables Predicting Paternal Scores on the Child Behaviour Measures

ECBI Intensity Score

The paternal PSI Parent Domain, PSI Child Domain, and DAS scores in combination explained only 11% of the ECBI Intensity scores (see Table 10). Interestingly, a negative beta weight on the PSI Parent Domain score contributed significantly to the variance explained on the paternal ECBI Intensity score. Higher parent domain stress during the child's first year was related to a decreased frequency of behaviour problems reported by fathers when the child was age 7 years. The direction of the relationship is opposite to that found for mothers. For mothers, the relationship was in the expected direction. Additionally, the DAS score contributed significantly to the variance explained in Step 1. The inverse relationship between the ECBI Intensity score

and the DAS score was expected. Increased marital satisfaction during the child's first year was related to a decreased frequency in behaviour problems reported by fathers. It appears that the beta coefficients for the PSI Parent Domain should be significant at a lower alpha level than the betas for the DAS. However, the alpha level for the PSI Parent Domain and the DAS were very similar and ranged from p= .009 to .012. Proximity to the cut-off of p < .01 explains this apparent discrepancy. Family socioeconomic status, birth status, and child gender did not contribute significantly to the variance already explained. Parent domain stress contributed the largest beta weight to the model, followed by marital quality, and parenting stress in the child domain.

Table 10

Hierarchical Regression Analysis for Variables Predicting the ECBI Intensity Scores for Fathers (N=56)

	R	Adj. R^2	F of Equation	R^2 Change	Betas		
					Step 1	Step 2	Step 3
Step 1							
PSI Parent Domain					-.51*	-.54*	-.56*
PSI Child Domain					.31	.31	.33
DAS	.39	.11	3.19*	.16*	-.40*	-.44**	-.44**
Step 2							
Family SES	.41	.10	2.57*	.01		-.11	-.12
Step 3							
Birth Status							.05
Child Gender	.41	.07	1.68	.00			.02

Note. PSI= Parenting Stress Index. DAS= Dyadic Adjustment Scale. SES= socioeconomic status.
* p < .05. **p <.01.

ECBI Problem Score

The regression model did not explain any of the variance on the ECBI Problem scores (see Table 11). The PSI Child domain consistently contributed the largest beta coefficient to model.

Table 11

Hierarchical Regression Analysis for Variables Predicting the ECBI Problem Scores for Fathers (N=55)

	R	Adj. R^2	F of Equation	R^2 Change	Betas		
					Step 1	Step 2	Step 3
Step 1							
PSI Parent Domain					-.18	-.18	-.20
PSI Child Domain					.35	.35	.42*
DAS	.27	.02	1.32	.07	-.05	-.06	-.04
Step 2							
Family SES	.27	-.00	.99	.00		-.04	- .04
Step 3							
Birth Status							.12
Child Gender	.31	-.02	.83	.02			-.10

Note. PSI= Parenting Stress Index. DAS= Dyadic Adjustment Scale. SES= socioeconomic status.
* $p < .05$.

NLSCY Emotional Symptom Score

There were no significant predictors for the paternal scores on the NLSCY Emotional Symptom scale (see Table 12). Parenting stress in the child domain contributed the largest beta coefficient to the equation.

Table 12

Hierarchical Regression Analysis for Variables Predicting the NLSCY Emotional Symptoms Scores for Fathers (N=56)

	R	Adj. R^2	F of Equation	R^2 Change	Betas		
					Step 1	Step 2	Step 3
Step 1							
PSI Parent Domain					-.02	-.04	-.03
PSI Child Domain					.17	.16	.18
DAS	.15	-.03	.43	.02	.07	.03	.03
Step 2							
Family SES	.20	-.04	.52	.01		-.13	-.13
Step 3							
Birth Status							.00
Child Gender	.21	-.07	.37	.00			-.07

Note. PSI= Parenting Stress Index. DAS= Dyadic Adjustment Scale. SES= socioeconomic status.

NLSCY Prosocial Behaviour Score

Paternal PSI Parent Domain, PSI Child Domain, and DAS scores in combination explained only 6% of the variance on the paternal NLSCY Prosocial Behaviour scores (see Table 13). Family SES did not make an additional contribution to the variance already explained in Step 1. The addition of birth status and child gender in Step 3 increased the amount of variance already explained in Step 2 by 2%. Individually, none of the predictors were significant. In Step 1, the PSI Parent Domain score contributed the largest beta coefficient to the model, followed by the DAS score. In Step 3, the child's birth status contributed the largest beta coefficient. The higher the fathers score on the NLSCY Prosocial Behaviour scale, the more likely the child is born preterm.

Table 13

Hierarchical Regression Analysis for Variables Predicting NLSCY Prosocial Behaviour Scores for Fathers (N=56)

	R^2	Adj. R^2	F of Equation	R^2 Change	Betas		
					Step 1	Step 2	Step 3
Step 1							
PSI Parent Domain					.39	.37	.43
PSI Child Domain					-.02	-.02	-.14
DAS	.33	.06	2.14	.11	.27	.23	.21
Step 2							
Family SES	.35	.05	1.76	.01		-.11	-.10
Step 3							
Group							-.22
Gender	.41	.07	1.70	.05			.10

Note. PSI= Parenting Stress Index. DAS= Dyadic Adjustment Scale. SES = socioeconomic Status.

Second Order Analyses

Reasons were explored for the limited amount of variance explained by the predictor variables on the behaviour measures. The PSI Parent Domain score includes a Relationship with Spouse subscale that has conceptual overlap with DAS score. Parents who score high on the PSI Spouse subscale are those who lack emotional and instrumental support from the other parent in the area of child management (Abidin, 1995). Parents who score low on the DAS are those who have difficulty achieving consensus about family problems, lack cohesivenss in the family unit, and are dissatisfied with their spousal relationship. A lack of support may be linked to a generally negative relationship between the parents as measured by the DAS. The correlation between the PSI Spouse subscale and the DAS was -.51 for mothers, and -.34 for fathers. Because of the theoretical potential for multicollinearity between the PSI Spouse subscale and the

DAS, collinearity diagnostics were re-examined. Diagnostics included tolerance, which is the amount of variance in a variable that is not accounted for by the other independent variables. For example, a tolerance of 0 is perfect collinearity; a tolerance closer to 1 is most desirable. By removing the spouse subscale from the PSI Parent Domain score, the tolerance increased from .37 to .40 for the PSI Parent Domain. Removing the spouse subscale from the PSI Parent Domain increased the tolerance for the DAS from .74 to .82. In the full regression model, removal of the PSI Parent Domain Spouse subscale, increased the amount of variance explained for the mother ECBI Intensity scale by 1.1%. Since removal of the PSI Spouse subscale from the PSI Parent Domain score improved the collinearity diagnostics and increased the amount of variance explained, this modified PSI Parent Domain measure was used in a second order analyses

To determine if a specific subscale on the PSI Child Domain was correlated with the behaviour measures, each subscale was examined closely. It was expected that the PSI Mood subscale would be correlated with the NLSCY Emotional Symptoms scale. The PSI Mood subscale includes items such as "My child seems to cry or fuss more often than most children" and "When playing my child doesn't often giggle or laugh". These items are similar to items on the NLSCY Emotional Symptoms scale: "Cries a lot" and "Is not as happy as other children". There were no significant correlations between the PSI Mood subscale and the NLSCY Emotional Symptom scale for the mothers ($r = .05$) or fathers ($r = .17$).

Magill-Evans and Harrison (in press) found that replacing the mothers' PSI Child Domain scores with the mothers' PSI Distractibility subscale scores increased the amount of variance explained in expressive language from 15% to 19%. With the same sample in

the present study, a modest positive relationship was found between the average 3 and 12 months PSI Distractibility subscale and the ECBI Intensity and Problem scores for mothers and fathers. For mothers, the correlations between the average 3 and 12 months PSI Distractibility score and the conduct behaviour measures ranged from .29 to .39. The correlations were weaker for fathers and ranged from .19 to .33. Correlations between the average PSI Distractibility scores and the NLSCY Emotional Symptoms scores were .26 for mothers and .11 for fathers. PSI Distractibility scores were more strongly correlated with mothers' NLSCY Prosocial Behaviour scores (r = -.36) than fathers' (r = .01). Since the PSI Distractibility subscale was a predictor of expressive language in previous research with this sample and a relationship was demonstrated between the PSI Distractibility subscale and the behaviour measures for both mothers and fathers, the PSI Child Domain score was replaced by the PSI Distractibility subscale for the second order analyses.

Using hierarchical regression, the analyses were re-run using the PSI Parent Domain scale (excluding the Spouse subscale), the PSI Child Domain Distractibility subscale, and the DAS (unmodified) for each of the behaviour measures for the mothers and fathers. As before, the averages of the 3 and 12 month scores were used. Family socioeconomic status was entered in Step 2 followed by birth status and child gender in Step 3.

Second Order Hierarchical Regression for Variables Predicting Maternal Scores on the Child Behaviour Measures

ECBI Intensity Score

For mothers, the combination of the PSI Child Domain Distractibility score, the PSI Parent Domain score (excluding Spouse), and the DAS explained 30% of the

variance on the ECBI Intensity scores (see Table 14), double the amount explained previously. The PSI Distractibility subscale and the PSI Parent Domain score (excluding Spouse) contributed significantly to the model. The DAS did not enter the stepwise regression equation when using the revised predictors. Family socioeconomic status, birth status, and child gender did not add significantly to the model.

Table 14

Hierarchical Regression Analysis for Second Order Variables Predicting ECBI Intensity Scores for Mothers (N=62)

	R	Adj. R^2	F of Equation	R^2 Change	Betas Step 1	Betas Step 2	Betas Step 3
Step 1							
PSI Parent Domain modified[a]					.22	.22	.28*
PSI Child Domain Distractibility					.42***	.42***	.41**
DAS	.58	.30	9.67***	.33***	-.14	-.14	-.12
Step 2							
Family SES	.58	.29	7.13***	.00		.00	.00
Step 3							
Birth Status	.61	.30	5.32***	.03			.01
Child Gender							-.19

Note. PSI= Parenting Stress Index. DAS= Dyadic Adjustment Scale. SES= socioeconomic status.
[a] PSI Parent Domain modified excludes the Spouse subscale. * $p < .05$. ** $p < .01$. *** $p < .001$.

ECBI Problem Score

For mothers, the combination of the PSI Child Domain Distractibility score, the PSI Parent Domain score (excluding Spouse), and the DAS explained 24% of the variance on the ECBI Problem scores (see Table 15), double the amount explained previously. The DAS did not contribute significantly to the model. The addition of family socioeconomic status, birth status and gender did not add significantly to the variance already explained in Step 1.

Table 15

Hierarchical Regression Analysis for Second Order Variables Predicting ECBI Problem Scores for Mothers (N=62)

	R	Adj. R^2	F of Equation	R^2 Change	Betas Step 1	Step 2	Step 3
Step 1							
PSI Parent Domain modified[a]					.32*	.29*	.32*
PSI Child Domain Distractibility					.35**	.35**	.35**
DAS	.53	.24	7.49***	.28***	-.02	-.01	-.01
Step 2							
Family SES	.53	.23	5.61**	.00		-.06	-.06
Step 3							
Birth Status							.02
Child Gender	.54	.21	3.72**	.01			-.08

Note. PSI= Parenting Stress Index. DAS= Dyadic Adjustment Scale. SES= socioeconomic status.
[a] PSI Parent Domain modified excludes the Spouse subscale.
* $p < .05$. ** $p < .01$. *** $p < .001$.

NLSCY Emotional Symptoms Score

The Step 1 predictors explained only 4% of the variance on the NLSCY Emotional Behaviour scores for mothers (see Table 16). The PSI Distractibility subscale contributed the largest beta weight to Step 1 but this contribution was not significant. The addition of family socioeconomic status, birth status, and child gender did not add to the variance already explained.

Table 16

Hierarchical Regression Analyses for Second Order Variables Predicting NLSCY Emotional Symptoms scores for Mothers (N=62)

	R	Adj. R^2	F of Equation	R^2 Change	Betas		
					Step 1	Step 2	Step 3
Step 1							
PSI Parent Domain modified[a]					.11	.09	.07
PSI Child Domain Distractibility					.21	.21	.23
DAS	.30	.04	1.92	.09	-.09	-.09	-.10
Step 2							
Family SES	.30	.03	1.45	.00		-.05	-.06
Step 3							
Birth Status							.11
Child Gender	.33	.01	1.09	.01			.05

Note. PSI= Parenting Stress Index. DAS= Dyadic Adjustment Scale. SES= socioeconomic status. [a] PSI Parent Domain modified excludes the Spouse subscale.

NLSCY Prosocial Behaviour scores

For mothers, the full regression model explained 18% of the variance on the Prosocial Behaviour scores (see Table 17) compared to 7% previously explained. The PSI Distractibility subscale contributed significantly to the model in Steps 1 to 3. The addition of family socioeconomic status did not add to the variance explained in Step 1. However the addition of birth status and child gender significantly increased the variance explained. Child gender contributed significantly to the variance explained in Step 3.

Table 17

Hierarchical Regression Analyses for Second Order Variables Predicting NLSCY Prosocial Behaviour scores for Mothers (N=62)

	R^2	Adj. R^2	F of Equation	R^2 Change	Betas Step 1	Step 2	Step 3
Step 1							
PSI Parent Domain modified[a]					.03	.02	-.08
PSI Child Domain Distractibility					-.33*	-.33*	-.32*
DAS	.39	.11	3.53*	.15*	.17	.17	.14
Step 2							
Family SES	.39	.10	2.61*	.00		-.02	-.02
Step 3							
Birth Status							-.11
Child Gender	.51	.18	3.18**	.10*			.32*

Note. PSI= Parenting Stress Index. DAS= Dyadic Adjustment Scale. SES= socioeconomic status. [a] PSI Parent Domain modified excludes the Spouse subscale.
* $p < .05$. ** $p < .01$.

Second Order Hierarchical Regression for Variables Predicting Paternal Scores on the Child Behaviour Measures

ECBI Intensity Score

For fathers, the PSI Parent Domain excluding Spouse, the PSI Distractibility subscale, and the DAS together accounted for 11% of the variance in the ECBI Intensity scores (see Table 18). There was no change in the amount of variance explained with the second order model. Similar to the initial regression model, the PSI Parent Domain excluding Spouse and the DAS contributed significantly. Similar to the initial regression model predicting fathers' scores on the ECBI Intensity scale, there was a negative beta coefficient for the PSI Parent Domain excluding Spouse. That is, higher parenting stress during the child's first year predicted a decreased frequency of conduct behaviour problems in the child reported by fathers. The addition of family socioeconomic status,

birth status and child gender did not contribute anything additional to the variance already explained in Step 1.

Table 18

Hierarchical Regression Analyses for Second Order Variables Predicting ECBI Intensity Scores for Fathers (N=56)

	R	Adj. R^2	F of Equation	R^2 Change	Betas		
					Step 1	Step 2	Step 3
Step 1							
PSI Parent Domain modified[a]					-.32*	-.36*	-.36*
PSI Child Domain Distractibility					.25	.25	.26
DAS	.40	.11	3.38*	.16*	-.33*	-.38*	-.38*
Step 2							
Family SES	.42	.12	2.79*	.02		-.14	-.14
Step 3							
Birth Status							.01
Child Gender	.42	.08	1.79	.00			.02

Note. PSI= Parenting Stress Index. DAS= Dyadic Adjustment Scale. SES= socioeconomic status. [a] PSI Parent Domain modified excludes the Spouse subscale.
* $p < .05$.

ECBI Problem Score

For fathers, the combination of the PSI Parent Domain score (excluding the Spouse subscale), the PSI Child Domain Distractibility score, and marital quality explained 13% of the variance on the ECBI Problem scores (see Table 19), where 2% of the variance was explained previously. Only the PSI Child Domain Distractibility subscale contributed significantly to the variance explained in the ECBI Problem scores for fathers in Step 1. The addition of family socioeconomic status, birth status, and child gender did not contribute anything additional to the variance already explained in Step1.

Table 19

Hierarchical Regression Analyses for Second Order Variables Predicting ECBI Problem Scores for Fathers (N=55)

	R	Adj. R^2	F of Equation	R^2 Change	Betas Step 1	Betas Step 2	Betas Step 3
Step 1							
PSI Parent Domain excluding Spouse					-.00	-.02	.01
PSI Child Domain Distractibility					.43**	.43**	.45**
DAS	.42	.13	3.64*	.176	.04	.20	.05
Step 2							
Family SES	.42	.11	2.73*	.003		-.06	-.06
Step 3							
Group							.09
Gender	.44	.09	1.94	.016			-.09

Note. PSI= Parenting Stress Index. DAS= Dyadic Adjustment Scale. SES= socioeconomic status.
* $p < .05$. ** $p < .01$.

NLSCY Emotional Symptoms score

None of the predictor variables contributed significantly to the model to explain father scores on the NLSCY Emotional Symptoms scale (see Table 20). Similar to the initial regression equation predicting the father's scores on the NLSCY Emotional Symptoms subscale, negative values for the adjusted R^2 represent an unstable regression solution that may be a result of limited sample size or perhaps a curvilinear relationship between the predictor variables and the behaviour measure.

Table 20

Hierarchical Regression Analysis for Second Order Variables Predicting NLSCY Emotional Symptoms scores for Fathers (N=56)

	R	Adj. R^2	F of Equation	R^2 Change	Betas		
					Step 1	Step 2	Step 3
Step 1							
PSI Parent Domain excluding Spouse					.13	.10	.12
PSI Child Domain Distractibility					.10	.11	.11
DAS	.17	-.03	.50	.03	.12	.08	.09
Step 2							
Family SES	.20	-.03	.55	.01		-.12	-.12
Step 3							
Group							-.03
Gender	.22	-.07	.40	.01			-.07

Note. PSI= Parenting Stress Index. DAS= Dyadic Adjustment Scale. SES= socioeconomic status.

NLSCY Prosocial Behaviour score

For fathers, the PSI Parent Domain score (excluding the Spouse subscale), PSI Child Domain Distractibility score, and marital quality explained only 4% of the variance in the NLSCY Prosocial Behaviour scores (see Table 21), less than explained previously. The addition of family socioeconomic status, birth status, and child gender did not contribute significantly to the model. The PSI Parent Domain score excluding spouse contributed the largest beta weights to the model and was a significant predictor in Steps 1 and 2.

Table 21

Hierarchical Regression Analysis for Second Order Variables Predicting NLSCY Prosocial Behaviour scores for Fathers (N=56)

	R	Adj. R^2	F of Equation	R^2 Change	Betas Step 1	Betas Step 2	Betas Step 3
Step 1							
PSI Parent Domain excluding Spouse					.35*	.32*	.30
PSI Child Domain Distractibility					-.02	-.02	-.06
DAS	.31	.04	1.82	.10	.24	.20	.17
Step 2							
Family SES	.32	.04	1.50	.01		-.11	-.10
Step 3							
Group							-.19
Gender	.39	.05	1.47	.05			.11

Note. PSI= Parenting Stress Index. DAS= Dyadic Adjustment Scale. SES= socioeconomic status.
* $p < .05$.

Comparison of Maternal and Paternal Variables Predicting Child Behaviour

In the initial regression models, the PSI Child Domain and the DAS scores were the best, albeit non-significant predictors, for mothers' scores, whereas the PSI Parent Domain and DAS scores were significant predictors for fathers' scores on the ECBI Intensity scale. In the second order regression analyses, the PSI Parent Domain (excluding the Spouse subscale) and the PSI Distractibility subscale scores were significant predictors for mothers' scores whereas the PSI Parent Domain (excluding the Spouse subscale) and the DAS continued to be significant predictors for fathers' scores.

In the initial regression models predicting the ECBI Problem scores, the PSI Parent Domain and the PSI Child Domain scores were the best predictors for mothers' scores, whereas the PSI Child Domain score was a significant predictor for fathers' scores. In the second order analyses, the PSI Parent Domain (excluding the Spouse

subscale) and the PSI Distractibility subscale scores were significant predictors for mothers' scores, whereas only the PSI Distractibility subscale score was a significant predictor for fathers' scores.

In the initial and second order regression models there were no significant predictors for mothers' or fathers' scores on the NLSCY Emotional Symptoms scale and few on the NLSCY Prosocial Behaviour scale. In the initial regression model predicting the NLSCY Prosocial Behaviour scores, child gender was a significant predictor for mothers' scores but in the second order regression model, the PSI Distractibility score and child gender were significant predictors for mothers' scores. There were no significant predictors for fathers' scores on the NLSCY Prosocial Behaviour scale.

Comparison of Maternal and Paternal Perceptions of Their Child's Behaviour at 7 years

There were 56 families for whom both the mother and the father returned a completed questionnaire at 7 years. Only these families are included in a t-test for the comparison of paired samples to estimate the differences in mothers' and fathers' reports of the same child on the behaviour measures. Results are displayed in Table 22. Fathers reported higher scores on the ECBI Intensity and NLSCY Emotional scales at 7 years than mothers of the same child, but the difference was not significant. Mothers reported higher ECBI Problem scores than fathers, but again the difference was not significant. Mothers reported a significantly greater number of prosocial behaviours than did fathers of the same child (t (55) = 3.12, $p < .01$).

Table 22

Comparison of Maternal and Paternal Perceptions of Their Child's Behaviour at 7 Years (N=56)

	Mothers'		Fathers'		
Behaviour Scores	M	SD	M	SD	p
ECBI Intensity	98.25	23.19	101.23	26.04	.18
ECBI Problem [a]	5.36	5.69	4.85	5.72	.45
NLSCY Emotional Behaviour	3.23	2.66	3.96	2.30	.05
NLSCY Prosocial Behaviour	13.98	3.29	12.59	3.81	<.01

Note. ECBI = Eyberg Child Behaviour Inventory. NLSCY = National Longitudinal Survey of Children and Youth. [a] N=55.

Stability of Maternal and Paternal Reports of Their Child's Behaviour on the ECBI at 4 and 7 Years of Age

There were 47 families for whom there were complete ECBI data at both 4 and 7 years. Only these families are included in the comparison of ECBI Intensity and Problem scores over time (see Table 23). For mothers, the ECBI Intensity and Problem scores remained stable between 4 and 7 years (r = .65 and .73, respectively). For fathers, scores on the ECBI Intensity and Problem scores also remained stable between 4 and 7 years (r = .65 and .55, respectively). For mothers, the impact of the behaviour on the parent was more stable than the frequency of behaviour problems. For fathers, the frequency of behaviours was more stable than the report of the impact of the behaviour on the parent. Interestingly, correlations between mother and father reports of the frequency of conduct behaviour problems was stronger at age 7 (r = .74) years than age 4 years (r = .59).

Table 23

Correlations Between Maternal and Paternal ECBI Scores at 4 and 7 Years (N = 47)

	Correlations						
	2	3	4	5	6	7	8
4 Years							
1. Mothers' Intensity	.68*	.59*	.40*	.65*	.52*	.41*	.56*
2. Mothers' Problem		.51*	.60*	.41*	.73*	.40*	.51*
3. Fathers' Intensity			.40*	.60*	.55*	.65*	.43*
4. Fathers' Problem				.24	.54*	.25	.55*
7 Years							
5. Mothers' Intensity					.61*	.74*	.59*
6. Mothers' Problem						.66*	.64*
7. Fathers' Intensity							.55*
8. Fathers' Problem							

Note. *$p < .01$.

CHAPTER 5

Discussion of the Findings of Phase I

The present longitudinal study focused on mother and father reports of the early family environmental factors that influence behavioural development in young children. The findings from Phase I support the relationship of early parenting stress and marital quality to perceived conduct behaviour problems and emotional symptoms, and to a lesser extent, prosocial behaviours at age 7 years.

The findings of Phase I of the study are discussed in this chapter beginning with the early family environmental factors that influenced the development of conduct behaviour problems, emotional symptoms, and prosocial behaviours at age 7 years. This is followed by a discussion of the differences in mother and father perceptions of child behaviours and concludes with a discussion of the stability of conduct behaviour problems between the ages of 4 and 7 years.

Conduct Behaviour Problems

A significant contribution of the present study is the finding that parenting stress as a result of the child's distractibility during infancy may predict child conduct behaviour problems at age 7 years. Stress as a result of the child's distractibility predicted the frequency of conduct behaviour problems as reported by the mother and the impact of problems on both the mother and father. The relationship between parental perceptions of the child as distractible and later conduct behaviour problems may be related to stable characteristics of the child, parental perceptions of the child, or the impact of the child's environment. Recent neuro-biological research suggests that distractibility may be a function of the child's ability to attend to stimuli (Kilpelainen et al., 1999) and this may

be apparent early in the child's life. However, the authors stated that it is unclear whether distractibility is a hereditary or acquired characteristic of the child, or whether it is related to environmental influences on the child's development such as high levels of stress in the family environment.

In the present study, the relationship between parenting stress related to the child's distractibility and conduct behaviour problems may represent an accurate parental assessment of a stable child characteristic. The PSI Distractibility subscale items and the ECBI items demonstrate some overlap with each other and with symptoms of Attention Deficit Hyperactivity Disorder as defined in the DSM-IV (American Psychiatric Association, 1994). The PSI Distractibility subscale includes items such as, "My child appears disorganized and is easily distracted", "Compared to most, my child has more difficulty concentrating and paying attention". The ECBI includes items such as, "Is easily distracted", "Has short attention span", and "Fails to finish tasks or projects". The PSI Distractibility subscale, completed during infancy, and the ECBI, completed at age 7 years, both appear to measure the parent's perceptions of their child's distractibility.

If the relationship between parenting stress related to the child's distractibility and the development of conduct behaviour problems represents an accurate assessment of a stable child characteristic, it was hypothesized that a strong relationship would exist between the PSI Distractibility subscale scores and the attention deficit/hyperactivity items on the ECBI Intensity scale, despite the six years between measurement and the use of different measures. On the basis of a factor analysis of the ECBI conducted by Burns and Patterson (1991), the items that loaded on the Attention-Deficit Hyperactivity Disorder factor (items 28 through 35) were selected from the ECBI Intensity scale.

However, the relationships between the PSI and the ECBI measures of distractibility/hyperactivity were modest for mothers ($r = .46$, $p < .01$) and weak for fathers ($r = .22$, not significant). Therefore, findings from the present study provide limited support for the hypothesis that distractibility is related to attention deficit/hyperactivity as a stable characteristic of the child.

It is argued that temperament is a stable child characteristic and may interact with environmental characteristics, such as family stress and parenting style, to influence behavioural outcomes (Lengua, West, & Sandler, 1998; Rothbart, Ahadi, & Evans, 2000). Child temperament has been related to the development of child behaviour problems in numerous studies (Caspi, 2000; Lengua et al.; Pettit & Bates, 1989; Sanson, & Rothbart, 1995; Thomas & Chess, 1977). Children with difficult temperaments who lived in high conflict families had more behaviour problems than children with easy temperaments (Tschann, Kaiser, Chesney, Alkon, & Boyce, 1996). In contrast, Belsky and colleagues (1998) failed to support the widespread view that infant negativity evokes problem-inducing parenting behaviour and suggest that negative infants may be more susceptible to harsh parenting and consequently to the development of child behaviour problems. Perhaps a measure of temperament in future research may provide evidence for the role of child characteristics in behavioural development.

Alternatively, the relationship between stress as a result of the child's distractibility and later conduct behaviour problems may represent stable, negative parental cognitive representations of the child. In a longitudinal study of children from infancy to late adolescence, Olson and colleagues (2000) examined mother-child interactions and maternal perceptions of child difficultness, resistance to control, and

unresponsiveness to the parent. Children at risk for externalizing behaviours were perceived as difficult and resistant to control. Mothers' perceptions of her child as emotionally unresponsive to her was a consistent predictor of later behaviour problems, suggesting that maternal negative perceptions associated with behaviour problems may be evident in early childhood. The predictive pattern was very similar for girls and boys. Some researchers (Nix et al., 1999; Bugental & Johnston, 2000) suggest that these negative cognitive representations of the child may operate at a relatively unaware, automatic level and act as organizers of expectations and guides to behaviour. Research into the origins and consequences of these cognitive representations is emerging slowly. However, increasing attention has been given to the mediating processes by which parents' cognitive representations produce their effects on child and family behaviours (Bugental & Johnston). The effects may occur through negative affect toward the child that may include expressed anger or irritation, frustration, sadness, contempt, and general anxiety or discomfort (Isley, O'Neil, Clatfelter, & Parke, 1999). Negative affect displayed by fathers in play interaction with their preschool child is associated with increased verbal and physical aggressive behaviour reported by teachers (Carson & Parke, 1996). Isley and her colleagues, along with Carson and Park, suggest that parental modeling of negative interaction styles and children's subsequent imitation and transfer of those interaction styles to interactions with others may play an important role in child behavioral development. Isley and her colleagues found that higher levels of parental negative affect expressed in same sex dyads (father to son; mother to daughter) was associated with an increase in teacher and peer related behaviour problems measured concurrently and one year later, at age 6 years. These researchers suggest that through

negative affect, parents may not be fostering effective emotional regulation in their children. Children who are better able to regulate emotion may display more appropriate impulse control and emotional self-regulation (Eisenberg, Fabes, Guthrie, & Reiser, 2000). Thus, evidence exists to support the hypothesis that negativity toward the child may result in the development of behaviour problems. The processes, however, for the effects of negative cognitive representations on behavioural development are unclear.

Parental mental health may influence a parent's ability to perceive a child positively and to provide warm, responsive parenting. Relative to nondepressed mothers, depressed mothers made more negative appraisals of their children's behaviour which in turn resulted in more critical, coercive parenting (Shaughency & Lahey, 1985). Alternatively, maternal depression may distort maternal perceptions of their child's behaviour (Boyle & Pickles, 1997). Mothers who are depressed may be more irritable and have reduced tolerance for misbehaviour and consequently report more behaviour problems for their child (Cummings & Davies, 1994). Eyberg and her colleagues (1992) suggest that depression contributes significantly to concurrent maternal reports of their child's conduct behaviour problems. The relationship between paternal depressive symptoms, negative parental perceptions of the child and subsequent behaviour problems is unclear (DeKleyn, Biernbaum, Speltz, & Greenberg, 1998). These researchers demonstrated inconsistent relationships between paternal depression and behaviour problems in samples of clinic and non-referred early school age boys. In future research, the inclusion of a measure of parental mental health may contribute to an understanding of some of the moderating or mediating effects of parenting on behavioural development.

In the present study, if negative parental cognitive representations of the child are related to higher frequencies of later behaviour problems through the effects of depression, then parental depressive symptoms measured during the child's infancy may be correlated with later behaviour problems. The PSI Parent Domain includes a Depression subscale (Abidin, 1995). The correlations between the PSI Depression subscale and reports of conduct behaviour problems at 7 years ranged from .29 (ECBI Intensity scale) to .32 (ECBI Problem scale) for mothers and .03 (ECBI Intensity scale) to .14 (ECBI Problem scale) for fathers. Correlations between the PSI Depression subscale and the NLSCY Emotional Symptoms and Prosocial Behaviours scores were lower. The PSI Depression subscale may be inadequate as a measure of parental depression or a measure of continuing depression after 12 months may be needed. Alternatively, parental depression may not have an impact on child behavioural development.

Stressful life events, such as health problems and financial difficulties, are related to maternal depression. Webster-Stratton (1990) found that mothers with higher stress engaged in more coercive parenting, were more negative in interaction with their children, and reported significantly more conduct behaviour problems. Abidin and his colleagues (1992) found a significant relationship between parenting stress (Depression and Competence subscales) during the child's first year and child behaviour problems reported by mothers when the child was age 4 ½. Other researchers found no relationship between early measures of stress in families and later child behaviour problems. Brandt and her colleagues (1992) reported that concurrent measures of stressful life events, such as problematic marriages, death in the family, employment and financial problems, were better discriminators of child behaviour problems at 8 years than a measure of stress in

the family during infancy. It may be that the length of time between infancy and 8 years of age is too great to measure the impact of early family environmental variables, but 4 ½ years may more reasonable. In the present study, using different measures, early stress as a result of the child's distractibility predicted conduct behaviour problems age 7 years. Perhaps the use of specific subscales on the PSI may be better predictors of certain aspects of behavioural development than the PSI Domain scores.

Stress in the parent domain and marital quality were significant predictors of the frequency of conduct behaviour problems reported by fathers. Unexpectedly, paternal reports of lower stress in the Parent Domain during the first year were related to an increased frequency of behaviour problems at 7 years, a counterintuitive finding. Abidin (1995) suggests that parents who are not engaged in monitoring their child do not experience high levels of parenting stress. Fathers may experience less parenting stress in the Parent Domain during the child's first year because mothers are usually the primary caregivers and have greater responsibilities for the child. Researchers have found that in some situations (preterm birth), mothers may dominate parenting activities to the exclusion of fathers (Miles & Holditch-Davis, 1995). Fathers who have limited contact with their child may report lower parenting stress. Conversely, fathers who are involved in monitoring and guiding their child's development may report higher levels of stress associated with a more active parenting role. More active involvement in parenting by fathers may decrease the frequency of later behaviour problems.

In the present study, marital quality (in combination with stress in the parent domain) predicted fathers' reports of child conduct behaviour problems, but not mothers' reports. This finding is consistent with Goldberg and Easterbrook (1984) who found that

father's parenting is influenced more by the quality of the marriage than is mother's parenting. However, the processes underlying the influence of father's marital quality on child behaviour problems is unclear. In families experiencing unresolved marital conflict, frequently fathers withdraw from the family to devote more time to other socially acceptable activities, such as paid employment (Wilson & Gottman, 1995). Marital conflict contributes to stress in the family and may decrease the time and energy the parent can expend in parenting. Increased stress and withdrawal of the father may result in inconsistent parenting practices and result in child conduct behaviour problems. In contrast, for fathers the effects of a warm, positive marital relationship with a spouse who encourages involvement in parenting may be particularly important to child behavioural development.

Mothers may receive more support for parenting from relatives and friends than from spouses. Abidin and his colleagues (1992) found that the addition of spousal support for mothers during the child's first year did not contribute any additional variance to a regression model predicting child behaviour problems at age 4 ½ years. Unfortunately, Abidin did not include in his study a measure of the spousal support for fathers. In another study, spousal support, measured concurrently, emerged as the most important resource for both mothers and fathers for parenting a child with externalizing behaviour problems (Suarez & Baker, 1997). The difference in the findings may be accounted for by the use of different measures of spousal support developed specifically for each study.

Family socioeconomic status was not found to be a significant predictor. The association of socioeconomic status with conduct behaviour problems has been studied

frequently with inconsistent results (Brandt et al., 1992; Duncan et al., 1994; Dodge et al., 1994; Lipman et al., 1994). Consistent with findings in the present study, Brandt and her colleagues did not find that socioeconomic status at birth was a predictor of behavioural development at age 8 years. Dodge and his colleagues found that preschool socioeconomic status was significantly related to teacher-rated externalizing problems and aggressive behaviours in American children from kindergarten to Grade 3. Socioeconomic status was viewed as a causal factor due to its correlation with harsh discipline, lack of maternal warmth, exposure to aggressive adult models, maternal aggressive values, family life stressors, mothers' lack of social support, peer group instability, and lack of cognitive stimulation. These researchers suggested that part of the effect of socioeconomic status on children's behavioral development may be mediated by status related socialization experiences (Dodge et al.).

In the present study, socioeconomic status was a composite measure of maternal and paternal education and occupation. Findings from previous research suggested that education and occupation may be insufficient to capture the effect of living in a family with low socioeconomic status (Huston et al., 1994). Other aspects of family life, such as parenting stress, marital conflict, health problems, family instability, lone parenthood, unemployment, and increased frequencies of family crises may be more important than the levels of education and occupation used to determine socioeconomic status. Additionally, parental education and occupation may change over time and a measure of socioeconomic status at birth may not predict behaviour problems reported 7 years later. In the present study, significant correlations existed between concurrently measured socioeconomic status and child behaviour problems at age 7 years for mothers (r = -.28 to

-.33) but not for fathers (r = -.12 to -.18). As expected, stronger relationships existed between the measures from birth to 4 years for mothers (r = -.23 to -.24) and fathers (r = .07 to -.33) than the measures from birth to 7 years for mothers (r = .07 to .09) and fathers (r = -.01 to -.04). Additionally, the sample in the present study was a relatively homogenous group with Hollingshead score means of 45.9 (SD = 10.2). Interestingly, the socioeconomic status scores for the present sample are more similar to the European American families in Dodge's sample (M = 47.2) than to Brandt's sample (M = 38.3). However, the mean Hollingshead score for the African American families in Dodge's sample was only 27.0. The inclusion of families in the low range of socioeconomic status may account for Dodge's significant findings.

Alternatively, the impact of distal variables such as socioeconomic status may be mediated by more proximal variables such as parenting stress and marital quality. Patterson and his colleagues (1992) suggested that the impact of parental life stress and psychological symptoms is mediated through direct parenting encounters with the child, such as with discipline. In contrast, DeKleyn and her colleagues (1998) suggested the impact of proximal and distal variables is more complex. In a longitudinal study these researchers found that fathers' negative discipline practices identified preschool boys who were referred to a behaviour management clinic. However, differences in life stress better predicted whether the child would continue to have problems one year later. In the present study, the more distal variable of socioeconomic status was not a predictor of behavioural development. The reasons may be associated with failure to tap all the dimensions of socioeconomic status, or the effect of socioeconomic status may be mediated by the more proximal variables such as parenting stress and marital quality.

Child gender was never a predictor of conduct behaviour problems. While the majority of the literature suggests that young boys exhibit more aggressive behaviours than young girls (Campbell, 1995), this does not necessarily mean that boys exhibit more conduct disorder than girls. Previous research in a clinic sample suggests there are no gender differences for children with oppositional defiant and attention deficit hyperactivity disorders (Ross et al., 1998). The measure of conduct disorder used in this study identifies oppositional defiant disorder and attention deficit hyperactive disorder, as well as aggressive behaviours. The inclusion of the former two types of behaviour may explain why no gender differences were found.

Emotional Symptoms

There were no significant predictors of emotional symptom scores. The reason for this may be due to the choice of inappropriate predictors or children may exhibit few emotional symptoms at age 7 years. The research literature suggests that family characteristics such as family stress, marital conflict, and parental anxiety and depression are commonly associated with the development and maintenance of emotional symptoms in children (Barrett, Rapee, Dadds, & Ryan, 1996). Child characteristics such as temperament and insecure attachment also may be factors contributing to emotional symptoms (Berstein, Rapoport, & Leonard, 1997) and were not included in the present study. However, the PSI includes a Mood subscale (Child Domain) and a Depression subscale (Parent Domain) which were hypothesized to be related with the NLSCY Emotional Symptoms scale. Correlations for mothers and fathers on both PSI subscales were not statistically significant.

Alternatively, children may exhibit few emotional symptoms at 7 years. Evidence from the NLSCY does not support this hypothesis, because the prevalence of emotional symptoms reported for children ages 4 and 11 years was 8.8%. Using similar emotional symptom items in the Ontario Child Health Survey, Bowen, Offord, and Boyle (1990) reported a prevalence of only 2.4% among children ages 12 to 16 years, a population reported to have a higher prevalence of emotional symptoms than early school age children (Berstein et al, 1997). However, there is no established clinical cutoff for the NLSCY Emotional Symptoms scale and the children who score in the top 10% are deemed to have emotional disorder. In the present study, the NLSCY Emotional Symptoms scores ranged from 0 to 9 (theoretical range of scores is 0 to 18) with a mean of 3.2 (SD = 2.5) for mothers and 4.0 (SD = 2.3) for fathers. On average, the children in this sample scored below the 25th percentile, with the highest score at the 50th percentile. These findings suggest that the reason for no significant predictors of emotional symptoms is that parents perceived that their children exhibited few emotional symptoms as measured by the NLSCY Emotional Symptoms scale. There is currently no concurrent or discriminant validity data to support the NLSCY criteria to identify those children with emotional disorder. The NLSCY Emotional Symptoms items were selected from the CBCL pool of items for an epidemiological survey and may not possess adequate reliability for research. Cronbach's alpha (.79) reported for the NLSCY Emotional Symptoms scale was acceptable (Statistics Canada/Human Researches Development Canada, 1996). However, in the present study, Cronbach's alpha ranges from .74 (mothers) to .63 (fathers). Further development of the scale may be required to improve the reliability and validity of this measure if it is to be used in future research.

Prosocial Behaviours

For mothers, child gender contributed significantly to the initial model predicting prosocial behaviours. Mothers of daughters reported a greater frequency of prosocial behaviours than mothers of sons. While it is generally assumed that girls exhibit more prosocial behaviour than boys, there is little evidence to support this notion (Grusec et al., 1996). Girls do exhibit stronger facial expressions of empathy than do boys (Zahn-Waxler, Radke-Yarrow, & King, 1992). If mothers are more receptive to these facial expressions of empathy, they may perceive more prosocial behaviours in their daughters. In the second order analysis for mothers, child gender was replaced by the PSI Distractibility subscale (inverse relationship) as the most significant predictor in the model; however, child gender continued to make a significant independent contribution to the model. These findings suggest that the mother's perception of the child as distractible is a stronger predictor of prosocial behaviour than child gender. There were no significant predictors of paternal scoring of prosocial behaviours. The differences between mothers and fathers may be related to the amount of opportunity the parent has to observe prosocial behaviour in their child or mothers, but not fathers, are responding to the cultural myth that girls exhibit more prosocial behaviours than boys (Grusec et al.).

Prosocial behaviours are significantly related to the frequency of conduct behaviour problems measured concurrently (r = -.41 for mothers and -.46 for fathers) and at age 4 years (r = -.39 for mothers and -.28 for fathers). These findings suggest that children who exhibit prosocial behaviours may control antisocial behaviours. This finding is consistent with Eisenberg and her colleagues (2000) who suggest that

regulatory undercontrol, such as low voluntary behaviour control and impulsivity, is a predictor of externalizing behaviour problems.

Predictors for Mothers and Fathers

Some of the predictors of conduct behaviour problems and prosocial behaviours were different for mothers and fathers. Stress as a result of the child's distractibility predicted the frequency of conduct behaviour problems as reported by the mother and the impact of problems on both the mother and father. Stress as a result of the child's distractibility and child gender predicted prosocial behaviours reported by mothers. Few previous studies have included fathers in their examination of the influence of early family environment on child behaviour. Abidin and his colleagues (1992) along with Koniak-Griffin and Verzemnieks (1995) included both mothers and fathers in their research. Both research teams found that maternal reports of child behaviour problems were better predictors of behaviour problems than paternal reports. Abidin and his colleagues suggested that the reason for lack of significant findings for fathers may be related to increased accuracy of maternal reports of child behaviour. Koniak-Griffin and Verzemnieks found a stronger relationship between mother and father reports of behaviour problems if mothers were employed outside the home. They suggested that parent perception of behaviour problems is related to the amount of contact the parent has with the child. Other researchers have suggested that as children's behaviour becomes more difficult, it is more variable across situations (Abidin et al.). Both parents may report child behaviour accurately but children may behave differently in the presence of their mother or father. The majority of research into the predictors of prosocial behaviours targets individual cognitive processes, such as emotionality and regulation

(Eisenberg et al., 2000) with little attention to family environment. Further systematic research is required in this area.

Stability of Eyberg Child Behavior Inventory Scores from 4 to 7 Years

In this study, moderate correlations (r = .55 to .73) were shown to exist between both mothers' and fathers' reports of conduct behaviour problems at age 4 and 7 years. This finding is supported by others who suggest that child behaviour problems are stable in both short-term and long-term follow-up studies in both clinic and community samples (for a review see Campbell, 1995). The stability of conduct behaviour problems may be due to the innate characteristics of the child or to continuity of socialization practices in the family. Findings from the present study would suggest the latter as early family environmental variables were better predictors of conduct behaviour problems than child gender or preterm birth. While the average frequency of conduct behaviour problems declined between 4 and 7 years, children with higher scores at 4 years tended to have higher scores at 7 years. There was a stronger relationship between mothers' and fathers' scores at age 7 years than at age 4 years. One explanation for this finding is that when the child is in school, both parents may have a similar amount contact with the child. If the mother is the primary caregiver during the preschool years, she may have a greater opportunity to observe conduct behaviour problems than the father.

Limitations of Phase I

The interpretation of the findings of Phase I is affected by several methodological issues. Among these are sample attrition, sensitivity of the behaviour measures, and the limited amount of variance explained.

Sample Attrition

While attrition in longitudinal research is expected, only 62 mothers and 56 fathers (out of a potential 93 families) returned answered questionnaires in Phase I. The most frequently cited reason was busy schedules associated with parenting a young family. For the sample of mothers, the power estimations were adequate for the hierarchical regression equations. However, the findings from the sample of fathers must be interpreted cautiously. The sample size of 56 falls below the conventional recommendation of ten cases per predictor variable. After adjusting for sample size, little or no variance in behavioral development could be explained for fathers. The small sample size may have provided inadequate statistical power to demonstrate a significant relationship. Alternatively, there may be no significant predictors of behavioural development for fathers among the variables selected for this study.

The generalizability of the present findings may be compromised by sample attrition. Attrition differentially affected the characteristics of the samples of mothers and fathers. Using demographic information collected at birth, parents who remained in the study after 7 years were older with more years of education than parents who dropped out. Generalizability of the findings from this study is limited by attrition of younger and less educated parents.

Sensitivity of Behaviour Measures

The state of science in the area of behavioral development suggests that it would be beneficial for the authors of the ECBI to formally create subscales similar to DSM-IV behaviour diagnoses (American Psychiatric Association, 1994). The ECBI is reported as a reliable and valid instrument to measure conduct disorder (Eyberg, 1992). However,

Burns and Patterson (1991) used a factor analysis of the ECBI to identify the constructs of oppositional defiant disorder, attention deficit hyperactivity disorder, and conduct disorder. Perhaps the use of well-defined constructs within the domain of conduct behaviour problems may result in stronger relationships with early predictors.

The NLSCY Emotional Symptoms scale may require additional development before further use in research studies. In the present study, the predictor variables explained little or none of the variance in the NLSCY Emotional Symptoms scores. Indeed, there may be no relationship between early parenting stress, marital quality and emotional symptoms at age 7 years. However, it is more likely that the psychometric properties of the scale contributed to insignificant findings. The internal consistency reliability for the NLSCY Emotional Symptoms scale was lower than desired for research purposes (.79 reported) and construct validity has not been established.

The NLSCY Prosocial Behaviour scale may be an inappropriate measure to obtain parent report data. The Prosocial Behaviour items are drawn from an instrument designed as a teacher report. For 90% of the children in the NLSCY, the mother completed the Prosocial Behaviour scale (Human Resources Development Canada/Statistics Canada, 1996). Some items on the Prosocial Behaviour scale were omitted by parents in the present study because they did not have an opportunity to observe their child's prosocial behaviours in a large group of peers. Since the Prosocial Behaviour scale contains some items that parents cannot easily answer, further development of the scale for parent report may be useful.

Linear Regression Analyses

In statistical analyses using linear regression modeling, the mediating effects of certain variables on others may be lost. Despite efforts to remove the potential collinearity with parenting stress, in this study marital quality was not a consistently strong predictor in the regression models. It may be that marital quality can mediate the effect of parenting stress through social support for the spouse. This may be particularly important for fathers, as marital quality was a predictor for fathers but not for mothers. Alternative approaches to analyses such as path analysis and structural equation modeling may provide additional information about the moderating or mediating effects of variables.

Limited Amount of Total Variance Explained

In the present study, the small sample size limited the number of predictor variables used in the regression models. A large part of the total variance in behavioural development remained unexplained. The unexplained variance may be due to the characteristics of a low risk community sample with few scores in the clinical range. Alternatively, the unexplained variance may be associated with constructs not measured in this study such as parental depression, child temperament, and social support. Four percent of Canadian children are living in families with four or more risk situations (single parenting, adolescent parent, low-income, or recent immigrant) that could jeopardize behavioural development (Human Resources Development Canada/Statistics Canada, 1996). The greatest adverse effects in families with these risk factors are from family dysfunction and low social support. The inclusion of measures of family dysfunction and social support in future research with community samples may assist in

determining the degree to which these variables have an impact on families and parenting capacities.

Summary of the Discussion of Phase I

Overall, the measure of stress as a result of the child's distractibility was the most consistent predictor across parents and across conduct behaviour problem scores. The PSI Child Domain Total scores proved to be weak predictors of conduct behaviour problems and obscured important information. When the PSI Child Domain Total scores were replaced with the PSI Distractibility subscale scores, more variance in conduct behaviour problems was explained for both mothers and fathers. Stress in the parent domain and marital quality were stronger predictors of conduct behaviour problems for fathers. Socioeconomic status, birth status (preterm or term), and child gender were never predictors of conduct behaviour problems. There were no significant predictors of emotional symptoms reported by either mothers or fathers. Child gender was a predictor of prosocial behaviour for mothers in the initial regression model. When the PSI Child Domain score was replaced with the PSI Distractibility subscale score, stress as a result of the child's distractibility combined with child gender as predictors of prosocial behaviour. Mothers' and fathers' perceptions of their child's behaviours at 7 years were different however, only the difference in mothers' and fathers' prosocial behaviour scores reached statistical significance. Parent reports of child conduct behaviour problems were stable between ages 4 and 7 years.

CHAPTER 6

Findings and Related Discussion for Phase II

The purpose of this chapter is to present the findings from parent interviews along with a discussion of the findings. The chapter begins with a description of the characteristics of the parents who participated in the interviews and their children. This description is followed by a discussion of the issues in data generation. Themes that emerged from the data and a discussion of these themes are presented. The chapter concludes with limitations of Phase II of the study.

Characteristics of Interview Participants

A purposive sample of eight parents from Phase I was selected. The sample consisted of both the biological mother and father of four children (two boys and two girls). Two children were born preterm. In half of the sample, both the mother and father reported a frequency of behaviour problems for their child above the clinical cutoff on the ECBI Intensity scale. In the other half of the sample, only one of the parents reported a score above the clinical cutoff. Thus, six parents reported ECBI Intensity scores above 127 and two parents reported scores below 127. The mothers were 29, 46, 41, and 29 years old. Their corresponding spouses were 28, 52, 42, and 43 years old. One mother had completed Grade 11 and was currently engaged in technical training; one mother had Grade 12. Two mothers had completed post-secondary degrees. All the fathers had completed high school; two had post-secondary degrees and some graduate education. Two mothers worked outside the home 12 and 15 hours per week. One mother cared for several other children in her home and one mother was unemployed. Three fathers were employed full time outside the home between 44 and 56 hours per week; one father was a

full time graduate student. Family socioeconomic status at birth, according to Hollingshead (1975) was 33, 55.5, 60.5, and 36. When the child was age 7 years, family socioeconomic status had increased for one, decreased for two families, and remained the same for one family. All parents were European Canadian, married, and currently living in the same household as their spouse and the target child.

The average age of the target children in the parent interview sample was the same as larger sample (7.4 years). One child lived in a family with one sibling; the other three children lived with two siblings. All siblings, except one, were boys. Parents reported their child's physical health ranged from fair to excellent. One child had chronic health problems unrelated to preterm birth. Two children were in Grade 1; two were in Grade 2. All the children had attended kindergarten; two had repeated kindergarten (a preterm boy and a term girl). According to parent reports, the children had average to excellent performance at school. The parents also reported that their children got along well to very well with their peers. Currently, none of the children were receiving specialized help at school.

Issues in Data Generation

The parents participated willingly in the interviews and were motivated to share the experience of parenting their child. Data were gathered in semi-structured interviews and field notes describing the family's physical environment, parental non-verbal behaviour, and off-tape discussions.

During the interview, time was allotted to develop rapport with the parent as the interviewer had no previous direct contact with him or her. Discussion of the weather, the Parent-Infant Project, and the family's activities facilitated the development of rapport

with parents. Regardless, some of the parents were hesitant to share certain information. For example, one mother appeared anxious and hesitated when discussion lead to a question about the relationship with her partner in a previous marriage. The mother and interviewer verbally agreed to avoid discussion in this area because it was too uncomfortable for the mother. Other parents were not at all hesitant about sharing their experiences and seemed to want to continue the interview long past the allotted time. For example, the interview with one father lasted for more than 2 hours and ended only because he had to take lunches to school for his children. For this father, the disclosure of past personal events and experiences related to abuse and neglect in his family of origin seemed cathartic. Similar to the women in a narrative inquiry about having a son labeled as behaviour disordered (Mikelson, 2000), participation in this study seemed to help the father 'sort things out' for himself. The family stresses and challenges that many parents were facing were emotionally draining to the interviewer. After one interview, the interviewer sought debriefing assistance from a colleague. Field notes following the interviews were inadequate to describe the intense emotion generated by the stories of some of the parents.

Themes

The major themes that emerged from the data are related to making sense of child behaviours, economic instability in the family, marital conflict, illness in the family, issues of parenting in the family of origin, and lack of support for parenting. Pseudonyms are used to protect the identities of the mothers and fathers in this study.

Making Sense of Child Behaviours

Parents made sense of their experience of parenting by appraising their child's characteristics, comparing their child's behaviours to those of other children, and then coming to terms with what it means to be a parent to their child.

"That's him!". Without exception, parents provided a positive general appraisal of their child's characteristics. Parents spoke of being proud of their children and described them as good students, respectful, interesting, and fun to be with. Parents of the same child often provided similar appraisals. One mother described her child as a "very neat kid" while the child's father said:

> …She's very active she likes to know things, ah… she tends to wander a little bit on her own but fascinating and really enjoyable. She is just a hoot to be with. Kevin

However, the positive general appraisals were consistently tempered with the specific parenting challenges. Some of the challenges were related to the parent's perception of extremes of behaviour in their child. The majority of the time the child's behaviour was acceptable, but at other times the child's behaviour was extreme. Parents found this behaviour difficult to explain. A mother spoke about her daughter's behaviour.

> When she is down she is REALLY down, but 90% of the time she is really, really good. Lisa

Similarly, a father spoke about his son.

> Like 99% of the time we are very proud of him but he does have days where, "Why the hell did you do that?" Greg

The extremes of their child's behaviour were often challenging to parents because time and energy were required to manage this behaviour when it occurred. Most parents suggested they could manage their child's behaviour problems through discussion, 'time

outs', or by withholding privileges. For some parents these strategies were different from the more physical discipline strategies (spanking and restraining) that they used with this child during the preschool years. Parents described the change in their discipline strategies as related to their child's maturity and the child's increased understanding of the consequences of his or her behaviour.

Parents described their children's behaviour as "pushing limits", "out to prove something", and "doesn't listen". One mother described a situation where she had just reiterated several rules about bicycle riding. Within minutes her son went out to ride his bike and broke every rule.

> He just wants to know that you see him sitting on the road on his bike after, and he just really wants to see how you are going to handle it…that's him! Susan

This mother had clearly told her son that he was not to ride his younger brother's bicycle, he must wear a helmet, and under no circumstances was he to cross the street. She describes looking out the front window, minutes after he left the house, to see him riding his brother's bike on the other side of the street without a helmet. To be a 'good parent', she had to drop what she was doing and discipline her son.

Some parents perceived their child's testing behaviours as predictable and expected that their child would continue to push the rules and guidelines established by the parent. As Lisa said,

> There will never be a given or an opportunity where she wouldn't try and just sort of see if she could sneak it past me. Lisa

Despite episodic behaviour problems, all parents provided positive general appraisals of their children. Also, some parents reported that they had developed

successful strategies to manage behaviour problems even though their child consistently and predictably challenged their parental authority.

"I always make that comparison." In trying to make sense of their child's behaviour problems, parents compared their child's behaviour to the behaviours of other children and their competence as parents to other parents. Social comparisons were based on previous parenting experiences with their own children or from observing the children of friends and relatives. Parents in this study indicated that their child had some behaviour problems but did not see those problems as different from the behaviour problems of most other children of a similar age. In appraising their child's behaviour, parents used social comparisons to normalize and accept their child's behaviour.

> You might think your child "Oh, I don't know why he does that. He's got to be the only kid on earth that does that". And then you find out well no, there is [sic] hundreds of kids that do exactly the same thing and then you feel a lot better…" Martha

Additionally, parental expectations of acceptable behaviour during the early school years may be tempered by recent memories of parenting an active toddler. Parents generally reported the structure of the school environment and perhaps maturation contributed to fewer behaviour problems in their child at school age.

Some parents used social comparisons to describe their competence as parents. One mother used downward social comparison to compare her parenting to that of her sister. She observed her sister's parenting style and chose to be different in her parenting.

> You know, I kind of speak from experience because I've got two nephews that nobody ever takes care of. They have to do all their own stuff, and I see in my children, maybe [son] specifically, because one of her boys is the same age. School is started, [son] doesn't have to worry about where his shoes and his clothes and his backpack are coming from, and it's all done and ready. He gets to help me with the label stuff, that's the fun part. But then maybe this other set of

> children [nephews] the day before school they are still worried about where their stuff is coming from. I find that is very unhealthy to other children. I think that's a very bad parenting step and I think that if you can avoid those things that you see unhealthy to other children, I think it makes you a little bit better of a parent. Susan

Another parent used upward social comparison to try to understand why she needed to make repeated requests to her children whereas her brother and sister-in-law always seemed to generate immediate compliance from their children.

> Like my older brother, for instance his kids…I always make that comparison, and I mean [I am] not envious or anything but there's such a contrast between his children and mine. His listen really, really well, he never raises his voice. She never raises her voice. They are told to do something and bang, it's done, and I marvel at that and , "My God, How do you do that?". Like I don't know, I am a very loving parent and I try not to raise my voice. I see you guys just handle everything so…I don't get it. Martha

This mother later implies that it is her sister-in-law's ability to arrange her work schedule to always be at home with her children and her consistent parenting that contribute to consistent compliance with the parent's wishes. Most of the parents seemed to have reflected on their child's characteristics, compared their child and their abilities as parents to others and had come to terms with what it means, and what it would continue to mean, to be a parent to this child.

"This is my job." Most of the parents described a long-term decision or commitment to parenting. However, an older parent described a sense of failure in parenting two older sons but spoke animatedly about his own activities that included long hours away from home to pursue graduate education and volunteer work in the education system.

The parents who described accepting parenting as a long-term investment of their time, energy, and financial resources tried to manage parenting the best way that they

could. Coming to terms with what it means to be a parent enabled some parents to clearly identify and mobilize internal resources to accomplish their parenting.

> Like I signed up for the job, like I can't quit, right. This is my job [parenting]. There are days where it's not fun and there are days where it's fun. But so…you don't get to choose the days that are gonna be fun or the days where it's not gonna be fun, so you just do it. Lisa

One mother, who provided childcare for other children in the family home, explained that she accepted her parenting role and enjoyed being a parent.

> And I think a huge difference, too is you have to enjoy being a parent, you have to WANT to be there for them, you know. There are families out there, and I've seen them, where the parents are just thinking, "Oh if these kids only weren't here right now I could go to the grocery store by myself". But I think it makes it a lot easier if you accept the fact that you are gonna be a parent for this long. The children aren't going anywhere; they are with you every day. This is my job. I don't have an outside job, so I guess I am speaking as mother who is home all the time, but if you can, just accept the fact that they're there and have some fun with them. Susan

This mother had learned to expect her son's challenging behaviours, such as disobedience, fights with siblings, and defiance of her authority. She accepted the consistent vigilance and monitoring of his behaviour at home and in interaction with siblings and friends outside the school environment as part of her job as a parent. Although this consistent vigilance and monitoring challenged her time and energy, she had a strong support network available to her. The father in this family had stable employment and actively managed work-related stress. The marital relationship was supportive and the family had actual or perceived, informal and formal support for parenting their children. This mother described the relationship with her family of origin as supportive of her parenting. She frequently asked her parents to care for the children for several hours so she and her husband can go shopping or spend time together. At school and through the children's extracurricular activities, the parents in this family had

met other families in their community whom they could call if they needed occasional help with transportation. If this family needed help in managing child behaviours, they had access to health care professionals in an early intervention program because their child had previously received services in the program for speech and language, and behaviour problems.

In families where parents worked outside the home in unstable economic environments, time and energy were scarce resources. Support networks for these families were limited. Chronic illness experienced by members of other families also contributed to reduced time and energy resources for parenting. Lack of economic resources, limited social support from relatives and friends, limited support between husband and wife, and the additional stress of illness in family members created an environment in which it was difficult to parent a child with behaviour problems. One mother whose husband worked out of town most of the time suggested that lack of support had an impact on her parenting.

> You know ... you have to vent somewhere. And normally if your spouse is home, or your parents are around, or you have a friend around, you can talk with them. But you don't want to unload things that are bothering you with your kids. So as a result, it gets stuck inside and it does show, you know. Martha

This mother went on to describe how a stressful day and lack of access to a support network affected her relationship with her son. Martha would send her son to watch television instead of including him in family activities such a meal preparation because she couldn't manage meal preparation and interaction with her son at the same time.

The majority of parents spoke about effective approaches and strategies for parenting such as consistency, the use of praise, avoidance of harsh discipline, the importance of family stability, and effective communication. Most of the parents

admitted that they embraced these approaches as ideals for parenting, however because of family and societal influences they could not always follow through. In the present study, parental perceptions of their child's behaviour problems were intensified by broader family issues. These issues included economic instability, marital conflict, illness in the family, issues of parenting in the family of origin, and lack of support for parenting.

Economic Instability in the Family

Families may be economically disadvantaged for different reasons. In this study, one father returned to university for a prolonged period of time. The family of five has been subsisting on student loans as the mother is unable to obtain paid employment outside the home because of serious health problems. The father's decision to return to university brought about long term economic disadvantage for his family with little hope for later economic improvement because of his age and the burden of student loan repayment.

> Well, it's a fairly high stressed family because we have the medical problems, we have financial problems and they've been ongoing for 5 years, 6 years kind of thing. Dick

Sufficient money for clothing, school lunches, and field trips was an ongoing issue for this family. The parents each described in great detail that their teenage son lacked an understanding about how to handle the little money they gave to him. When the parents challenged their son about his spending habits, invariably a major argument erupts with punishment but no apparent resolution of the problem. The mother perceived that her 7-year-old daughter, the target child, was too young to experience the effects of family stress and conflict associated with insufficient economic resources because she was

happy to play with her friends and not concerned about nice clothes and extra-curricular activities.

Another family faced economic instability because of a business failure and a subsequent uncertain job market for the father. The father of three early school age sons works out of town for most of the year. Because his company pays an additional allowance for meals away from home, he spends most of his time at home preparing meals to take with him to work so he can use his meal allowance to help pay for the mortgage on the house. The father spoke of considerable economic instability in terms of loss of employment, loss of a business, and inability to obtain employment insurance. Loss of the business caused considerable psychological stress for the family and in the past the father had contemplated suicide to obtain life insurance money to support his family.

> .... we had to make a loan because I was like bankrupt. We were just broke, broker that you can imagine and I was talkin' "Oh, I want to kill myself." I was talkin' like an idiot, and then I lost my job. Greg

As these children reach school age and their mother enters paid employment, the family believes that their economic situation will improve. In the meantime, the father keeps in touch by daily phone calls so he knows about with his sons' activities at school and is able to provide emotional support for his wife.

> Well, you know, you've got to talk to each kid, every night, so there's 15-20 minutes for each and there's [wife], she usually wants to talk for 1/2 hour or an hour and then you go to bed. So…and it sort of…it sucks [being away from home]. You gotta do what you gotta do. Greg

The problem for families experiencing economic instability was insufficient time and energy to spend with their child. For two of the families with major financial

problems, spending time with their child was a difficult situation; they had neither time nor money.

> So that's a short time [when not working] that you do have with them. You find yourself doing a lot of explaining and sometimes I feel like a bully because I am only with them a short time during the day when I am working. Or Daddy, especially, only has a few, a day or two with the kids and if they are misbehaving or they have a certain thing that needs to be straightened out then you feel like you spent the whole weekend lecturing your child, or something you know. Martha

In both economically unstable families, parents spoke about the importance of positive spousal relationships. The strength of the marital relationship in one family was unclear. In the other family, however, the parents consistently reported a strong, supportive marital relationship.

> Like I can be the biggest screw up and get us in debt or something and she [wife] will stand by my side and defend me to my family and her family, and she is just perfect, like you couldn't ask for a better wife. [Laughs]. She could ask for a better husband, but you can't ask for a better wife. Greg

In the family with the strong marital relationship, the parents used praise and minimal harsh discipline in their parenting. In the family where the strength of the marital relationship was unclear, the father referred to his use of harsh discipline and shouting matches to manage escalating behaviour problems, particularly with his adolescent son. At present he had been able to avoid these parenting behaviours with his 7-year-old daughter.

The work environment also had an impact on parenting behaviour. One of the fathers described his work environment as a place where verbal abuse of co-workers is required to gain respect and demonstrate that you "can handle it [job]".

> And it was doing drilling and stuff like that and everyone's got to be Joe Macho and, "Oh, I'll kick your head in, -beep- you, -beep- this." And I don't feel you have to do that, and I don't think you have to swear at somebody to make a point. Right? Say do this, do this or they don't do it, right. And I don't have to say, "Go get me that F-ing hose or I'll kick your head in." And then expect the guys to do it right? Greg

This father explained that he had lost one job because he was "too nice of a guy" and needed to adopt the language of his work place to maintain employment. He tried not to bring his work place language and deprecating attitude home to his children but he admitted he wasn't always successful. Inconsistencies between behavioural expectations in the work place and societal expectations for socially adept children contributed to parenting difficulties for this father. Yet, the necessity for paid employment forced him to continue to maintain employment in an unsupportive work environment to support his family.

Marital Conflict

In one family, both parents described episodes of marital conflict that influenced the two children. In this family, the mother was divorced from her son's father, remarried, and had a daughter, the target child in this study. The mother described how her daughter's behaviour actually improved during episodes of marital conflict. Her daughter reported that many of her classmates at school had experienced divorce and would always question her mother about divorce when the parents argued. The mother speculated that, to her daughter, marital conflict indicated the potential for divorce and the daughter attempted to avoid losing one parent by improving her behaviour.

> Because if [father] and I have had a fight she won't push the limits, she'll…she's more than accommodating. …you know, if tension's going on around here she acts very, very, good. She doesn't push. Which I know some kids would react that way, but no, she doesn't. Lisa

During episodes of marital conflict the mother tries to take responsibility for the conflict and make it clear to the children that they are not responsible for the problem.

> Like I just don't want them to think that they're responsible for causing a problem. So like, you know, "This isn't about you, this is about Mommy and Daddy not being able to agree," sort of thing, that's what ...what we try and do anyway. Lisa

The father in this family observed that when he and his wife are "really doing well" the children seem to be involved in more conflict between themselves. He expressed concerns that this conflict is learned behaviour that is a result of observing parental marital conflict.

> ...the one observation that I have made is that when we [wife] get along, when we are really doing well, the kids, there is something happening there. And that really bothers me, and this is something that I've observed, is that we are passing on some of our bad habits and some of our upbringing to them, which I'd rather not do. Kevin

In summary, parents seem to recognize the impact of marital conflict on their children however, they are not always able to change their behaviours to represent positive role models in interaction. As one father implied, the impact of learning parenting in the family of origin may override the parents' desires' to prevent their children from observing outbursts of conflict in their marital relationship. Additionally, as more children experience parental separation and divorce, discussion of the implications of marital conflict among peers may have an impact on how the child behaves in response to marital conflict.

Illness in the Family

In two families, physical illness in family members had an influence on parenting. In one family, the mother experienced a major physical illness that required extensive periods of hospitalization and frequent visits to the physician. Her illness left her with

little energy to parent her active 7-year-old daughter and two adolescent sons. In addition, she described feeling depressed about her family situation.

> Just, I don't get depressed for a long time it just comes and goes. I've been under stress for so long now that it seems a normal every day occurrence. Ruth

Because of her illness, the mother depends on her children to help around the house. The father in this family is rarely home to support his wife in her requests for assistance. The physical environment in the house would suggest that most often this mother is unsuccessful in her attempts to get assistance with the housework. She expresses her frustration.

> Yeah, well you know how it is, when you are with them they are misbehaving, they seem like the rottenest kids in the world. And if you compare it over the long term and especially if you are tired and run down and you've been busy that day you say "Jeez, just take these kids and ...out the window!" Ruth

The father in this family also verbalized a high degree of stress in the family related to the mother's chronic illness and he withdrew into activities outside the home.

In another family, the mother and both children had chronic illnesses for which the children were frequently hospitalized. To accommodate her children's illnesses, their need to be hospitalized, home from school, or to attend physician appointments, the mother found work where her hours could be flexible. The mother verbalized the importance of consistent discipline in parenting but described how difficult this was when the child was ill or in hospital.

> Well, and you tend to, when they're sick, you tend to let them push the limits sometimes, you do because you know what? You feel bad, you feel sorry for them, you feel guilty, it's all those things and so you let them push. "Just this one time." And it's much easier to be less consistent. Lisa

In another family, the mother and father described episodes of depression. Neither parent sought medical intervention for their mental health problem. The mother associated her depression with her husband's long work-related absences from home.

> … when [husband] is home we know each other's moods and we know each others routines and when one of us is a little out of whack the other one just automatically picks up and pulls the extra so the kids don't really notice much of a difference… But when [husband] is gone, it's only me, me, me, all the time. I can really sympathize with single parents. I don't know if I could do that full time. Martha

The father indicated that his depression was related to loss of the family business. During these periods of depression, both mother and father relied heavily on strong spousal support to recover.

> Yeah, I was very depressed. …and she was there for me, like hug me and kiss me and cuddled me and just let me blab on (laughs) and stand behind me. Greg

In summary, illness in the family appears to influence parenting and child behaviour problems in several ways. Parental illness without a strong marital relationship may render a parent less available in the parent-child relationship and less able to enforce family rules. Illness in the child may influence parenting by creating a situation where the parent (the mother in this case) thinks she needs to modify usual patterns of discipline when the child is ill. This response reduces consistency in parenting practices.

Issues of Parenting in the Family of Origin

The initial interview schedule did not include any questions about the parent's experiences in their family of origin. Most parents however, discussed their family of origin in relationship to their own experience of parenting. As the transgenerational influence on parenting became evident in the data, it was added as a question to the interview guide in subsequent interviews. Only two of the parents who discussed their family of origin related positive experiences of growing up. One mother and two fathers

experienced extremely poor parenting and harsh discipline in their families of origin. These parents spoke about being beaten, ignored, neglected, and physically and emotionally abused. During one of the later interviews, another father chose not to discuss how he was parented.

One mother of two children related her childhood experience of physical and emotional abuse.

> If mom had a bad day my dad would walk in the door and my mom would say, "Kill them!" So, you know, I mean, I guess I always coped with things because when I knew that my mom was in a bad mood I would run upstairs and put on five pairs of underwear and two pairs of pants so that way it wouldn't hurt so bad. Lisa

In describing her own parenting, this mother vehemently stated that she knew in her "gut" that what her parents did was wrong and for her children she had to follow her "gut" feelings and parent her children differently.

> Well, I think that, and this is going to sound horrible, but part of it was like if my mother did it one way then I knew I had to do it the other way 'cause I knew it made me feel bad so why would I make somebody else feel bad. Lisa

Data from this mother suggests that influences, such as reflection on past experiences, may have an impact in the decision to adopt a particular parenting style.

One father talked about calling a personal halt to trying to please his parents to gain their love and approval because whatever he did was never enough. The family asked for help from the father's family of origin, only if they desperately needed it and were always cautious about expectations of reciprocity.

In summary, all parents in this study who had reflected on the issues of parenting in their family of origin made conscious decisions to parent their children differently than

they had been parented. During the course of the interviews, most parents who decided to parent their children differently also acknowledged they were not always successful in their endeavor to do so.

Lack of Support for Parenting

Mothers in particular spoke about the importance of social support from various sources, including health care professionals, extended family, and community. None of the parents in the sample reported that their child was currently receiving any specialized help for behaviour problems. A child in one family had been referred to the regional rehabilitation hospital for treatment of hearing and speech problems as a preschooler. After the hearing and speech problems were resolved, the child attended a kindergarten program for the treatment of children with behaviour problems. The mother in this family remarked about the importance of the information about parenting obtained from the child specialists in the treatment program. She used many of the parenting strategies she learned in the treatment program and shared these strategies with her spouse so they could present a consistent approach to parenting all three children. While she valued previous professional support for her parenting, this mother suggested that community support was more important at this point in her life.

> I think the [rehabilitation hospital program] was a huge help to us, but I think in our overall life in where we stand now I think the community is a bigger support here. …You know, just the feeling that they belong, I think that's part of the support that I am talking about, too. And just know that this is where they should be, this is their park, this is their skating rink, that it belongs to all of us that live around here and help take care of it and things like that. Susan

Her husband identified the impact that his wife's learning had on his parenting behaviour.

> And she's helped me quite a bit with that [parenting skill], you know, tellin' me, "You know, this is the way you should do it, go do it." And I would go upstairs

> and have a stern talking with him instead of spanking and yelling at him, and it works. Jim

While some of the parents perceived they had strong support for their parenting, others spoke about lack of resource for families, particularly during times of crisis.

> …there are so many people who are trying to get in to see psychologist or psychiatrists that can't get in, that know something's not quite right, but it takes so long to get in or it takes money to actually go to these places that they don't have…But in a crisis time, you know you look for it and you can't get it in a crisis time. And what better time, that's when people know they need it [professional help] when they're in a crisis. But the crisis ends and it's over with and I think if people had, if there were services like that available that people could get into quickly, physical health would improve, parent (laughs)…These kids would improve, these kids that are in trouble. Lisa

Those parents who described effective support for their parenting often obtained this support from extended family members. In some families, parenting support was provided in terms of tangible aid to the family such as the provision of childcare, home maintenance, and monetary aid. At times, support came with expectations attached and the benefits of accepting the support had to be carefully weighed against the costs.

> And if they give it [money], it's begrudgingly. It's like, "Well, oh, you know, well …". Like even $30 bucks to go and get medicine or somethin"…Like it's trying to teach me a lesson or somethin"…To deal with my money or to deal with somethin' practically. It's hard to understand. Greg

This father avoided asking for tangible aid from his parents unless there was no other option. The stress of managing his parent's snide remarks about his need to borrow money and their frequent unreasonable requests for repayment was not worth the benefit of having the aid. However, because of economic instability in this family, the father often had no other options and had to approach his parents for help.

Parents who reported a strong marital relationship and positive parenting in at least one family of origin seemed to feel the most supported in their parenting. In families

with weak or conflictual marital relationships, one or both parents expressed a feeling of isolation and lack of support for parenting in their time of greatest need.

Discussion

In Phase II of the present study, mothers and fathers who reported behaviour problems for their child participated in in-depth interviews about their experience of parenting. The findings provide support for the relationship between a broad range of family environmental variables and parental perception of behaviour problems in their child. Parenting a child with behaviour problems frequently consumed time and energy that were already in low supply in families with high levels of stress related to economic instability, illness in the family, marital conflict, issues related to the family of origin, and lack of social support.

For parents in the present study, their child's behaviour could be both rewarding and frustrating at different times. Parents described their child's problems as somewhat predictable behaviour that could be managed with discussion, 'time outs', and withholding privileges. These strategies did not ensure that the behaviour would not reoccur, but usually solved the problem at the time. In contrast, based on a qualitative study of families of children diagnosed with attention deficit/hyperactive disorder, Kendall (1998) describes the daily unpredictability of behaviour problems and the disruptiveness of living with this child.

Parents in the present study worked hard at viewing their child as similar to other children. Making sense of their child's behaviour represented tensions between positively appraising their child's uniqueness and making social comparisons about whether the child and parent behaviour could be viewed as consistent with parental and societal

expectations. Social comparisons are used to evaluate personal characteristics, behaviour, opinions, and abilities through comparison with similar others (Stewart, 1993). Social comparison in the present study is similar to findings by Miles and Holditch-Davis (1995) who studied a sample of high-risk preterm infants at age 3 years. Mothers used downward comparison, in which they made positive comparisons between their infants and other preterm infants. Interestingly, these mothers held a stereotypical view of the characteristics of typical preterm infants as much less positive than those of average children. However, mothers did not apply this stereotype to their own child and viewed their preterm child as having characteristics that were at least as positive as the average child. At times, mothers of high-risk preterm infants regarded their child as similar to other children to the extent of denying serious health problems (Miles & Holditch-Davis, 1997). However, a positive appraisal of their child may contribute to parental ability to persevere with parenting.

The findings in the present study also are consistent with a narrative inquiry into the experiences of mothers of school aged boys who have been diagnosed as behaviour disordered (Mikelson, 2000). Mothers in her study spoke about the tensions between treasuring their child's diversity and having the child fit into the school system. In many cases, the mothers expounded at length about teachers, psychologists, and psychiatrists losing sight of the whole child and the family in an attempt to 'fit' the child's way of being into the inflexible mold of the typical classroom. Similar to the mothers in Mikelson's study, parents in this study were concerned about societal expectations of their child's behaviour. Several parents in this study actually stated that they would much rather the child exhibit behaviour problems at home than in public and reported that

behaviour problems occurred primarily at home. In general, parents provided a positive appraisal of their child during the interview and reported that their child performed well, both socially and academically. Unlike the boys in Mikelson's study, none of the children in the present sample currently carried a behaviour disorder diagnosis. However, similar to most of the mothers in Mikelson's study, parents in this study experienced a great deal of stress from a variety of sources including economic instability, chronic illness, marital conflict, and workplace stress.

Economic disadvantage is associated with the development of child behaviour problems (Duncan et al., 1994; Lipman et al., 1994). However, the research literature is inconclusive about the impact of low socioeconomic status versus low income (Huston et al., 1994). Additionally, the impact on child behaviour problems of factors such as stress in the workplace and economic instability are not well explored. In the present study, parents believed that family income was insufficient to explain the development of child behaviour problems. However, half of the families interviewed reported experiencing extreme economic instability that contributed to family stress. Perhaps economic instability with its associated family stress may be a stronger predictor of child behavioural outcomes than either socioeconomic status or family income.

It is widely assumed that marital conflict leads to the development of child behaviour problems through its association with the quality of the parent-child relationship (Grych & Fincham, 1990). In a meta-analysis of marital quality and the parent-child relationship, Erel and Burman (1995) suggest that the association between marital quality and child behaviour problems may occur through a spillover hypothesis. Spillover, a direct transfer of mood, affect, or behaviour from one setting to another, may

occur through one of four hypothesized mechanisms. In the first mechanism, attention is focused on the child's behaviour problems (scapegoating) and distracts the parents from conflict in the marital system. This mechanism reduces strain on the marital relationship but may result in negative parental perceptions of their child. The child may escalate misbehaviours to redirect attention away from threatening marital conflict. The second mechanism, based on social learning theory, emphasizes that vicarious learning of conflict modeled by parents has an influence on children's behaviours. The third mechanism focuses on the less consistent discipline and parenting strategies employed by parents experiencing marital conflict. Marital conflict may result in disagreements about discipline practices or may drain parenting energies required to employ consistent discipline. The fourth mechanism emphasizes that marital conflict and child behaviour problems lead to additional family stress and role strain. The sources of additional family stress and role strain may be marital conflict, disruptive child behaviours, or other factors such as economic instability or illness in the family.

The spillover hypothesis does not support fully the findings in the present study. In one family, parents reported that episodes of marital conflict were associated with reduced behaviour problems in their daughter. However, the father reported that marital harmony was associated with increased sibling conflict. A decrease in child behaviour problems during periods of marital conflict is opposite to what would be expected according to the scapegoating mechanism. Social learning theory may support the mechanism for increased sibling conflict, but why this occurs during periods of marital harmony is unclear. Perhaps, children may play out aggression observed in marital conflict between their parents, but only when they perceive the crisis is past. The reasons

underlying marital conflict in this family were not fully explored, but a difference of opinion related to management of chronic illness in the children was raised repeatedly by the father during the interview.

Parental modification of parenting practices during child illness may be related to the three requirements (protection, nurturance, and training) described by Ruddick in her theory of mothering (1989). Fulfillment of these requirements leads to preservation, growth, and social acceptability of the child. She suggests that in mothering a child, protection of child's safety and well-being takes precedence over the strategies of nurturance and training. Concern about protecting the child's well-being during illness may result in more lenient training and discipline. While it is evident that fathering plays a role in child development, no published reports were located of research that demonstrates how fathering is similar or different to mothering during child illness.

Issues of parenting in the family of origin may have an impact on the development of child behaviour problems through the transgenerational transfer of parenting skills. Patterson (1998) suggested that there is modest but convincing evidence to support transgenerational continuities in developmental theory. Similar to Belsky (1984), Patterson proposed that the "parenting one receives is what is used in rearing the next generation" (p.1264). In contrast, Rutter (1998) argued that transgenerational discontinuities are considerable stronger than transgenerational continuities. A major contributor to transgenerational discontinuities is the influence of the acquired marriage network on child outcomes. Rutter's argument supports the findings in the present study. The majority of parents described in detail the emotional and physical abuse they experienced in their family of origin. However, all parents who shared their experience of

adverse parenting in their family of origin expressed a commitment to parent their own children differently. Parents shared that the influence of a supportive spouse and extended family contributed to the their ability to commit to being an effective parent. The impact of parenting in the family of origin on the development of child behaviour problems may be influenced by variables such as spousal support or support from an extended family.

The importance of social support for parenting a child with perceived conduct behaviour problems was a recurrent theme that emerged in the present study. For some of the mothers and fathers, informal support from spouses played an important role in their ability to parent. This finding is consistent with findings from Suarez and Baker (1997) who conducted a study of well-educated, two-parent families with a child age 7 years. These authors identified spousal support as the most important resource to assist with parenting a child with behaviour problems. Additionally, they suggest that impact of informal support from secondary sources such as relatives and friends may be more important when support from a spouse is very low or non-existent. In contrast, DeKleyn and colleagues (1998) found no evidence that social support differentiates fathers of clinic-referred preschool boys with behaviour problems from a comparison group. Lack of social support may contribute indirectly to behaviour problems by moderating the impact of parenting stress or parental mental illness (Webster-Stratton, 1990).

In the present study, parents identified a need for formal support for parenting. In particular, mothers perceived a need for support from health professionals during times of family crises. Similar to findings by Stewart (2000) in a sample of mothers of chronically ill children referred to health professionals, formal support was not always available for

families in the present study. This finding is consistent with Mikelson's (2000) study of mothers of boys with a diagnosis of behaviour disorder. Mothers in Mikelson's study indicated that while they were eligible for formal support for their parenting, health care and education professionals did not always meet their needs. Negative labeling of their child, stereotypes of "bad mothers" as causes of underlying child behaviour problems, and lack of respect for the mother's perceptions of her child's behaviour contributed to their perceptions of being unsupported in spite of having access to professional services.

In summary, positive perceptions of the child seem to enable the parent to make a commitment to parenting regardless of the parent's perceptions of the child's behaviour problems. Parenting a child with behaviour problems frequently consumed additional resources of time and energy that were already in low supply in families with high levels of stress related to economic instability, illness in the family, marital conflict, and issues related to the family of origin. A perceived lack of informal and formal support for parenting contributed to parenting challenges.

Limitations of Phase II

The interpretation of findings from Phase II is affected by the procedure used to select participants. Based on the general information collected in Phase I of the study, an effort was made to select participants with characteristics that would enable them to provide information about a broad range of parenting experiences. As mentioned previously, the sample included two families where both parents reported a frequency of child behaviour problems on the ECBI Intensity scale above the clinical cutoff, and two families where only one parent reported a score above the clinical cutoff. The inclusion of two parents who reported a score below the clinical cutoff may have affected the

findings. One parent who reported a score below the cutoff scored only two points below; the other parent scored 12 points below. Both families, where only one parent reported a score below the clinical cutoff, were economically stable. Parents in both these families described processes to make sense of their child's behaviours that were similar to families where both parents reported scores above the clinical cutoff. In one of the families where only one parent reported a score below the clinical cutoff, parents reported chronic illness, marital conflict, lack of support for parenting, and issues related to parenting in the family of origin. These comparisons suggest that inclusion of two parents who reported a frequency of behaviour problems below the clinical cutoff did not affect the findings. However, it is unknown if the eight participants selected provided sufficient breadth and depth of data to be confident in the findings for Phase II. Time and resource constraints prevented the inclusion of additional participants.

CHAPTER 7

Conclusion

The results of both Phases of the study suggest that family environmental variables are better predictors of behavioural development than characteristics of the child. In this chapter integration of the findings from Phase I (quantitative) and Phase II (qualitative) of the study are presented. A discussion of the limitations of the study, including recommendations for future research, and implications for nursing practice conclude the chapter.

Integration of Findings from Phase I and Phase II

The purpose of integration is to identify, discuss, and synthesize the key similarities and differences between the findings of Phase I and Phase II of the study. The two phases used different methods to examine factors related to child behavioural development. It is hoped that approaching the study of behavioral development in young children from different methodological perspectives will enhance our understanding of this issue. The discussion begins with parental perceptions of their child followed by the impact of family stress, the lack of predictive ability of socioeconomic status, preterm birth, and child gender.

Parental Perceptions of Their Child

In Phase I, mothers and fathers who reported higher levels of parenting stress as a result of the child's distractibility during infancy also reported a greater frequency and impact of conduct behaviour problems at age 7 years. In Phase I standardized questionnaires were used. In Phase II, a smaller sample of parents who reported a high frequency of conduct behaviour problems, were interviewed in-depth.

They consistently perceived their child in generally positive terms and described the child as having infrequent episodes of behaviour problems. One might expect that parents who report a frequency of problems on a conduct behaviour questionnaire that is above the cut-off for referral to services, also would label their child negatively. However, this was not the case. Parents seemed to label their child as positively as they could regardless of their child's behaviour problems.

The concept of labeling has both positive and negative aspects (Gallagher, 1997). Positive labels used by parents or health care professionals promote dignity and competence in children through assessments that discover strengths and behaviour descriptions that promote healthy development. In contrast, negative labels such as behaviour disordered (Mikelson, 2000) accentuate weaknesses that often close the door to the positive aspects of the child characteristics and perhaps cloak other difficulties that may contribute to behaviour problems. Gallagher suggests that labels used by health care professionals can bring expectations of child behaviour that become a self-fulfilling prophecy.

In the present study, parents perceived their child as unique, different, and challenging, but not as behaviour disordered. If the child isn't labeled or diagnosed as having a behaviour problem, parents may find it easier to continue to parent a child who is difficult and "normal". Positive perceptions of the child seemed to enable these parents to make a commitment to parenting. However, parenting their child frequently consumed time and energy resources that were already in low supply as the families also had high levels of stress related to economic instability, chronic illness, marital conflict, and issues in the family of origin. Although at least one

parent in the families who participated in Phase II reported conduct behaviour problems above the clinical cutoff on the ECBI, none of the families were receiving professional assistance for a child with behaviour problems. Some researchers suggest that parents may deny the child has behaviour problems out of a desire to view the child as healthy or the parent may recognize the behaviour problems but attribute minimal negative consequences to the problems (Sanford, Offord, Boyle, Peace, & Racine, 1992).

Similarly, mothers of high-risk preterm infants worked hard at viewing their child as normal sometimes to the extent of denial of serious health problems (Miles & Holditch-Davis, 1995). Miles and Holditch-Davis suggested that mothers held a paradoxical view of their preterm infant as both normal and special, usually created by using downward comparisons of their family with others who had a preterm infant. That is, mothers viewed their child as less like other preterm children and more like a typically developing child. When parents are unable to label their child positively, they may be unable or unwilling to invest the time and energy required to appropriately parent a child with behaviour problems.

There is a negative aspect to avoiding labels in children with conduct behaviour problems. Health and education system program funding criteria are structured to provide services for children who fit particular diagnostic criteria (Child and Adolescent Services, 2000). Families of children without a diagnosis or label provided as a result of a professional assessment are often ineligible for services. If the family does not recognize behaviour problems and does not seek professional assistance, then the child and family may have limited access to intervention services.

Family Stress

A descriptive comparison of the stress scores for mothers and fathers in Phase I and Phase II demonstrated some differences. A statistical comparison was not possible because the samples are not independent and the sample sizes are unequal. On average, mothers in Phase II reported more stress in both the parent and child domains during the child's first year than mothers in Phase I. On average, fathers in Phase II reported less stress in the parent domain than fathers in Phase I. However, fathers in both Phases reported similar stress in the child domain. Both mothers and fathers in Phase II reported more stress as a result of the child's distractibility than parents in Phase I.

Data from Phase I focused on only one aspect of stress and did not assess the complexity of stress in families with young children. In Phase II, parents described family stresses, broader than parenting stress alone, which influenced their parenting ability. High stress became a way of life in some families. Parents described how they worked from crisis to crisis with the attitude of "What more can happen?" Living with chronically high stress, families had little opportunity to recover from crisis situations. In families who identified many stresses, parents reported that they were less available to provide warm, responsive, consistent parenting for their children. Parents described stress from economic instability, chronic illness in the family, marital conflict, and issues of parenting arising from their family of origin.

Economic instability added to parenting stress in many ways. This finding is consistent with a study by McLoyd (1998) who found that economic hardship creates stress in adults that is manifest in increased irritability and vulnerability to daily

hassles associated with parenting. Inadequate financial resources frequently resulted in family conflict about how to best use scarce resources. To maintain a family income, one father was compelled to remain in a stressful and undesirable work environment. The transition between work and home environments created intra-personal conflict for this father. The behaviour required of him at work was incongruent with the behaviour he expected of himself as a role model for his young sons.

Parents in Phase II reported that chronic illness in the family created parenting stress because of disruptions in the family routines related to frequent hospitalizations and appointments. The measure of parenting stress used in Phase I includes a parental health subscale however, there were no significant correlations between stress associated with parental health during the child's first year and child behaviour at age 7 years. The parenting stress instrument does not include a measure of stress associated with the child's health. Parents in Phase II reported that when the child was affected by illness, parenting stress resulted from frequent hospitalizations and the parents' inability to provide consistent parenting. The parents often tolerated certain behaviours when the child was hospitalized but when the child returned home, guidelines for appropriate behaviour had to be reestablished. When the parent was affected by chronic illness, parenting stress seemed to be associated with the inability to be actively engaged with the child as a parent. The parents' lack of energy to parent an active school age child contributed to parenting stress. There is considerable research about the impact of parenting stress in families with chronically ill children (Abidin, 1995; Miles & Holditch-Davis, 1997). However the majority of these studies

used small samples of mothers of infants and preschool children with severe disabilities and illnesses. Research about the relationship between parental chronic health problems and child behaviour problems is related primarily to mental health (Cummings & Davies, 1994).

Marital conflict contributed to parenting stress for mothers and fathers in Phase II of the present study. Mothers and fathers in Phase II reported lower marital quality during the child's first year than mothers and fathers in Phase I. While the marital quality score for two fathers in Phase II fell above the clinical cutoff on the DAS, all scores for mothers in Phase II fell within the referral range. Interestingly, in Phase I, the DAS was a predictor of behaviour problems for fathers but not for mothers. Perhaps the DAS, a measure of satisfaction in a couple relationship, may not be useful as a predictor for behaviour problems as the items fail to tap the influence of marital conflict on behaviour problems. In the family with marital conflict, the father withdrew from the family to spend more time at work. This finding is consistent with findings by Katz and Gottman (1993) who reported that fathers withdrew from family interaction during high levels of marital conflict.

Issues of parenting rooted in the family of origin are not addressed in the PSI although one item alludes to increased problems with in-laws and relatives since the birth of the child (Abidin, 1995). In the present study, parental descriptions of physical and mental abuse and neglect had a significant impact on how they decided to parent their own children. In most cases, parents had reflected on their own upbringing and decided that their own parenting style would be more positive and nurturing. These decisions created stress for parents because the influence of

parenting in the family of origin continued to be strong, particularly if there was frequent contact with the family of origin. There is currently very little longitudinal research about the transgenerational impact of parenting in the family of origin (Cairns et al., 1998; Serbin et al., 1998). In future research, additional items related to parenting issues in the family of origin may broaden the understanding of factors contributing to parenting stress.

Global ratings of parenting stress, as measured by the PSI questionnaire, did not adequately capture the complexities of stress experienced by families. There is a need to explore the specific subscales of the PSI that contribute most to stress in families. The addition of subscales that capture the parent's ability to manage stress may be useful. In Phase II, parents shared information during the interviews that they did not report on the Phase I demographic questionnaire. This would suggest that self-report questionnaires alone are inadequate to measure complex constructs such as parenting stress. Additionally, it may be important to have personal contact to establish a relationship to explore sensitive family problems.

Non-predictive Variables

Findings from Phase I and Phase II suggest that healthy preterm birth status, child gender, and socioeconomic status have little influence on the development of conduct behaviour problems. Preterm birth status (30 to 36 weeks gestation and greater than 1500 grams birth weight) was not predictive of behavioral development in Phase I or Phase II. In samples of very low birth weight and small for gestational age preterm children, birth status may be a better predictor (Schothorst & vanEngland, 1996). Child gender was a predictor of prosocial behaviours reported by

mothers. The influence of child gender on maternal reports of prosocial behaviour requires further study, because recent research suggests that both girls and boys exhibit prosocial behaviour (Grusec et al., 1996). Socioeconomic status was never a predictor in this study. Parents reported a broad range of education and occupation level; however, these variables changed over time. Perhaps measures of socioeconomic status concurrent with behaviour measures may be a better predictor. Other variables, such as family income (Duncan et al., 1994) and family stability (Ackerman, Kogos, Youngstrom, Schoff, & Izard, 1999), may be better predictors.

In summary, preterm birth status, child gender, and socioeconomic status did not predict behavioural development for children of mothers and fathers in these samples. In future research, the benefits of including such variables must be carefully weighed with the cost in terms of statistical power. In high risk clinic samples of older children the inclusion of gender and preterm birth may be useful. In low risk community samples, other variables may provide more useful information.

Differences in Mothers and Fathers Perceptions

Data from mothers and fathers was used in both Phases of this study. In both Phase I and Phase II, mothers and fathers provided different perceptions of the early family environment and their child's behaviour. In Phase I, maternal reports of high levels of parenting stress during infancy were associated with a greater frequency of behavioral problems. For fathers, low levels of parenting stress during the child's first year predicted behaviour problems. If fathers contribute importantly to the behavioral development of their children, three hypotheses are suggested to explain this finding. First, fathers may be less interested in parenting their child and perceive less

parenting stress as a result of lack of involvement in monitoring and guiding the child (Abidin, 1995). This lack of involvement may result in later behaviour problems. Alternatively, the father may perceive limited opportunities to be involved in parenting during infancy. Gieger (1996) suggests that even in nontraditional families where fathers are the primary caregiver of children 8 to 21 months of age, fathers do not assume their primary caregiving role until the child is 4 to 8 months of age. The reason for this is that mothers are usually breastfeeding and fathers' involvement in caregiving during the early months would conflict with the infant's best interests. Finally, the mother may limit the father's access to the child and hence his involvement in the child's development. In a study of parenting behaviours of mothers of high risk preterm infants (less than 1500 grams at birth), the normal protective behaviours of mother were intensified (Miles & Holditch-Davis, 1995). Mothers did not allow people to get near their preterm infant(s) and some mothers limited even all father's involvement to protect their child. In contrast, in a study of older children (20 months to 19 years) paternal involvement in parenting was higher among fathers who reported higher levels of support and encouragement from their wives (DeLuccie, 1996). In the present study, the effect of decreased involvement in parenting may reduce parenting stress reported by fathers. However, decreased involvement in parenting may include decreased monitoring and guidance of child behaviour and may result in the development of later child behaviour problems.

In summary, it is important to include data from both mothers and fathers. The study of fathers and parenting has largely been neglected. Fathers are left out of the sample, are combined with mothers for the analyses, or are compared to mothers as if

mothers were the standards for all parents. Future research is required to increase the understanding of fathering. Instruments with adequate normative data that are appropriate for fathers would be useful in delineating the father's unique responses and roles in parenting.

General Limitations of the Study

Certain limitations constrain the use of findings from this study. These limitations include the inadequacy of the theoretical perspectives, issues with multiple methods design, and the use of only parent-report data.

Theoretical Perspectives

In this study, the Structural/Behavioral Model of development (Horowitz, 1990) and symbolic interactionism (Blumer, 1969) provided the theoretical perspectives. However, the findings suggest that neither of these perspectives, either alone or in combination, is adequate to support a full understanding of the complexity of human behavioural development.

One assumption of the Structural/Behavioral Model is that there are periodic reorganizations of the biological and environmental variables that influence development in young children (Horowitz, 1990). The influence of biological and environmental variables on individual children may have a different impact at different times during development. How this occurs is poorly understood. How do biological and environmental variables interact? Do variables influence outcomes bidirectionally? Are there thresholds of influence for certain variables? The Structural/Behavioral Model of development (Horowitz) is insufficient as a theoretical perspective to answer these questions.

Symbolic interactionism focuses attention on the meaning that is derived from social interaction. Individuals behave depending on the meaning that things have for them. While symbolic interactionism is useful to explain the social interaction of behaviour, it is inadequate to address the importance of the interaction among the biological characteristics of individuals and their environment. Technological advances, such as magnetic resonance imaging, have made it possible to study the brain and complex neuro-biological processes that interact with factors in the child's environment. A theoretical perspective is needed that allows the researcher to address those interactions at different levels of systems and subsystems within the biological, psychological, and environmental aspects of development over time.

Multiple Method Design Issues

Phase I included parent-report data collected at several times throughout the child's development. In Phase II, parents were asked to recall the factors they believed influenced their child's behavioural development over the past 7 years. It was anticipated that the Phase II data would provide support for the findings in Phase I or perhaps suggest alternative hypotheses. During the interviews, parents reported that their family circumstances had changed since their child was an infant. Parents emphasized the concurrent factors that contributed to their child's behavioural development such as economic instability, chronic illness, and issues with the family of origin. Global parental perceptions of family stress as a factor that influences behavioural development contributes to the strength of findings in Phase I. However, methodological differences in approaches to data collection must be considered in interpreting the findings. Family stress measured concurrently with parent-reports of

behaviour may be a better predictor of child behaviour problems than early family environment.

Parent-Report Data

Data from both Phase I and Phase II of this study are based solely on parental perceptions of their child's behaviour. Factors such as parental mental illness, parenting stress, and marital conflict may alter a parent's perceptions. However, according to symbolic interactionism, individuals act on the basis of their perceptions. If parents act toward their children based on what they perceive about the child and his or her behaviour, then parental report data is valuable. However, to assist in understanding behavioural development, future research needs to include information from other observers, such as teachers. Differences or similarities in the reports of child behaviours may provide insight into the accuracy of behaviour reports and the impact of context on child behaviours.

The perspective of the child was not addressed in the present study. Self-report behaviour questionnaires for children as young as 7 years currently are unavailable and qualitative data from young children in the form of drawings and stories are difficult to collect and interpret. However, in studies that involve older children, their perspective on the parenting they receive and the impact of their behaviour on others may provide additional insight into behavioural development.

Methodological Issues

The purpose of the Phase II interviews was to explore the parent's perspective parenting and the factors that influenced their child's behavioural development. During the interviews, it was difficult for parents to remember information about the

family's environment during their child's early years. Parents focused their discussion on current family circumstances that contributed to their child's behaviour and different dimensions of stress than were examined in Phase I. Current family environment may have a greater impact on parental perceptions of their child's behaviour.

Future Research

The results of this study suggest that additional research is required to develop the theory and constructs to explain child behavioural development. The theoretical perspectives for the present study, the Structural/Behaviour Model of development (Horowitz, 1990) and symbolic interactionism (Blumer, 1969), have captured some, but not all the central elements to explain child behaviour development. According to the Structural/Behavioural Model, periodic reorganization of child characteristics and environmental variables influence development. However, the theoretical perspective does not adequately address the importance of the interaction among variables. Symbolic interactionism is useful to explain the importance of social interaction that influences behaviour; it fails to address the contribution to development of the biological characteristics of the child. In future research, the holistic interactionism (Magnusson, 1998) perspective may prove to be a more useful theoretical perspective to explain behavioural development. Holistic interactionism addresses the biological characteristics of the child and the interaction of these characteristics over time with the child's environment. Holistic interactionism provides a better theoretical perspective to understand the causes underlying certain developmental trajectories and how behaviour at one developmental stage may influence behaviour at a later

stage. As a holistic interactionism perspective addresses multiple factors and their interactions, it is not possible to investigate all components of the model in a single study. However, holistic interactionism may be a useful theoretical perspective to build a program of research that contributes to the understanding of child behavioural development.

The limitations of the present study suggest that Phase I be replicated with an increased sample size to allow for an increased number of predictor variables. In a replication study, it would be important to explore the dimension of parenting stress as result of the child's distractibility. The inclusion of a researcher observation measure in addition to parent report instruments may help to answer the question of whether distractibility is a stable characteristic of the child or if it represents a negative parental perception of the child. Alternatively, teacher report instruments could be used to obtain a measure of the child's behaviour from someone outside the family.

Fathers need to be included in subsequent research to assist in determining how dimensions of fathering differ from dimensions of mothering. In the present study, different variables predicted child behavioural development as reported by mothers and fathers. Future research that includes the mother and father of the same child will increase our understanding of the differences between mothers and fathers in their perceptions of child behaviour and their contribution to child development.

During in-depth interviews, parents identified additional constructs, such as social support and issues of parenting in the family of origin that were not measured in the self-report questionnaires. Parents who were interviewed identified formal and

informal social support as important to parenting. However, the type and source of support varied with the age of the child. For example, once children reached school age, instrumental support from relatives expanded to include support from the broader community. For some parents, perceived and instrumental support from relatives remained unchanged. For others, social support from relatives decreased as parents decided to disengage from unhelpful relationships. Thus, the sources and types of social support as well as changes over time are important constructs to explore in future research. Issues of parenting in the family of origin and how these issues affect parenting and behavioural development are important areas for further study. Several parents who were interviewed reported that physical and emotional abuse characterized childhood in their family of origin. They described how they had engaged in reflection on their childhood experiences and voiced determination to parent differently than they had been parented. Future research is needed to explore the role of reflection on childhood experiences of being parented in the family of origin and how parents come to a decision that they will parent their own children differently.

Implications for Nursing Practice

In the present study, mother and father reports of child distractibility during infancy predicted a modest amount of the variance in the frequency and impact on the parent of childhood behaviour problems at age 7 years. That is, a relationship was demonstrated between a negative parental perception of the child during infancy and negative reports of the child's behaviour at 7 years. If this finding is related to difficulties in the transition to parenthood, nurses are well positioned to provide

support for families. Unfortunately, limited research is available about how infants are incorporated into the family, how different family systems accommodate the child, and the implications of that process for the development of the parent-child relationship. The findings from this study need to be replicated before measures of distractibility can be considered to predict behaviour problems in practice.

In families with children who have conduct behaviour problems, nurses need to be sensitive to the differing perspectives of mothers and fathers. Whenever possible, nurses need to obtain information about the child from both parents. Nurses need to assess families for problems such as parenting stress, economic instability, chronic health problems, and unresolved issues in families of origin. It is important for nurses to balance the information about parenting strategies designed to manage problematic behaviours within normal limits of development and the need for formal assessment of the child and family required to secure early intervention services. Early labeling can have a negative impact on developmental outcomes; however, the importance of early intervention before negative patterns of interaction become engrained in families cannot be ignored.

In families with children who have behaviour problems, crises that affect parenting may occur frequently. It is important for policy decision-makers to provide timely and easily accessible crisis intervention with ongoing professional support to enable families to recover. Parenting support telephone hotlines and access to family counseling services are important. Mothers and fathers who feel supported in their parenting can provide warm and compassionate models for the development of prosocial behaviours in their children.

If these findings can be replicated, the implication for early intervention could be significant. For example, helping families more effectively manage stress and marital conflict may be as critical a component of early intervention as teaching behaviour management strategies to parents (DeKleyn et al. 1998). Nursing assessments should be broadened to include parents' perception of their marital adjustment, the extent to which they agree about the child's problems and their perceptions of mutual support in their parenting. Intervention with parents could also include efforts to promote more open communication and greater support around issues related to parenting. The expectation would be that parents who perceive themselves as working well together would experience less negative impact of child behaviour problems (Suarez & Baker, 1997).

General Summary of the Study

In summary, valuable findings in relation to the predictors of behavioural development at age 7 years were obtained in both Phase I and II. In Phase I, a unique finding was that the parenting stress as a result of the child's distractibility during infancy predicted a modest amount of the variance in behaviour problems reported by mothers and fathers at age 7 years. Findings from Phase II suggest that parents perceived their child positively but behaviour problems created challenges for their parenting. This occurred because these families were experiencing high levels of stress related to economic instability, chronic illness, marital conflict, and issues in the family of origin. Data from Phase I and II suggests that family socioeconomic status does not contribute to child behavioural development. In Phase II, parents suggested that spending time with the child was more important than money.

Paradoxically, several parents who worked long hours in low-paying jobs had little time or money. Findings in Phase I that gender and healthy preterm birth status did not contribute to behaviour problems were consistent with findings in Phase II.

The findings from this study contribute valuable insight into the complexity of influences on child behavioural development. The differences in findings between Phase I and II suggest that multiple method designs are useful to increase knowledge in this area. Finally, the findings provide support for parenting as an important area for early intervention to prevent the development of child behaviour problems.

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Appendix A

Correspondence with Parents

- Letter sent to update contact with the parents in the Parent-Infant Project
- Letter of introduction from Dr. Harrison to accompany questionnaires
- Instructions on how to complete and return the questionnaires
- Reminder letter sent to parents who did not return an answered or unanswered questionnaire
- Instructions for telephone reminder to parents

UNIVERSITY OF ALBERTA

Letter sent to update contact with the parents in the Parent-Infant Project

Undergraduate Office
3-109 Clinical Sciences Building
Phone: (780) 492-4404
Fax: (780) 492-4844

Graduate Office
3-134 Clinical Sciences Building
Phone: (780) 492-6251
Fax: (780) 492-2551

Research Office
3-126 Clinical Sciences Building
Phone: (780) 492-6832
Fax: (780) 492-2551

Teaching Office
4-111 Clinical Sciences Building
Phone: (780) 492-6240
Fax: (780) 492-2551

General Information
3-114 Clinical Sciences Building
Phone: (780) 492-4404
Fax: (780) 492-2551

Office of the Dean
3-129 Clinical Sciences Building
Phone: (780) 492-6236
Fax: (780) 492-2551

April 2, 1999

Dear _____,

When we last wrote you, your child was getting ready to begin school. We are interested in how the children in our study are doing now that they are in school. Following the same children and families into the school years will help us to understand more about children's development and the contributions of parent-child interactions.

One of our graduate students is interested in the behaviours of children who were born early in comparison to children who were born close to the expected due date (term). Later this spring, we will mail questionnaires to the families in our study. We hope that you will be interested in answering these questionnaires about your child's behaviour and performance in school.

When we last contacted you, your phone number at home was _____ and at work _____. If either of these numbers has changed, please leave us a message at (780) 492-7344. If you have any questions or comments about anything related to the study, please call us at the same number.

We really appreciated your past involvement and interest in our research with children and their families.

Sincerely,

Margaret J. Harrison, RN, PhD
Faculty of Nursing

Joyce Magill-Evans, OT(C), PhD
Faculty of Rehabilitation Medicine

UNIVERSITY OF ALBERTA

Letter of introduction from Dr. Harrison to accompany questionnaires

April 28, 1999

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Dear_____,

Thank you for your continued interest in the Parent-Infant Project. Joyce Magill-Evans and I appreciate your time and help with our research.

When you joined the Parent-Infant Project, you said that you would consider being in other studies on families with children. Karen Benzies, a graduate student in the Faculty of Nursing, is studying whether the behaviour of children at 7 years is related to their experiences early in life.

If you are interested, Karen would like you to fill in one of the enclosed questionnaires. The questionnaires take about 20 minutes to answer. If you do not wish to participate, please return the questionnaires unanswered in the enclosed envelope. This will let us know that you choose not to participate. If one of you wishes to participate, please return the completed questionnaire with the blank one.

The code number assigned to your family in the Parent-Infant Project is on this questionnaire. Karen will only know the code numbers, not the names of the families in the Project. The questionnaires will be kept in a locked file cabinet. They will be destroyed 7 years after the study. If the researchers use the information in the future, they will ask permission from a university ethical review committee. When the findings of the study are discussed, your names will not be used.

Nurses will use the information from the study in planning how to help parents whose children are more difficult to parent. There is no direct benefit to you for being in the study. If you have any questions, please call me at (780) 492-5931. You may call collect.

Later in this research study, one of my research assistants will contact some parents to ask them if they are willing to talk to Karen about their parenting experience.

Thank you again for all your help with our research.

Sincerely,

Margaret J. Harrison, RN, PhD
Faculty of Nursing

UNIVERSITY OF ALBERTA

Instructions on how to complete and return questionnaires

Undergraduate Office
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April 28, 1999

Dear Parents,

Thank you for participating in my study about child behaviours. This letter gives directions for completing the questionnaires in this envelope. Two identical sets of questionnaires are included. In the top corner of each questionnaire there is the code number that you were assigned in the Parent-Infant Project. One questionnaire is to be completed by the mother, and one by the father. Please fill out the top part of the questionnaire. It is important for the study that I know who (mother or father) filled out which questionnaire. Please do not share your answers with your partner.

If there is any question that you do not wish to answer, please mark "no comment" beside it. This will let me know that you have not simply forgotten to answer that question. A self-addressed, stamped envelope has been provided to return the questionnaires. Please return them by **May 18, 1999**.

There is no direct benefit to you or your child for participating in this study. If you have any questions about my study or child behaviour, please telephone Dr. Harrison at (780) 492-5931. You may call collect.

If you want a summary of the results of this study, leave your name and address on the answering machine (780) 492-7344. Say that you called about the child behaviour study.

Sincerely,

Karen Benzies, RN, PhD Candidate

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Office of the Dean
3-129 Clinical Sciences Building
Phone: (780) 492-6236
Fax: (780) 492-2551

Reminder letter sent to parents who did not return an answered or unanswered questionnaire

May 25, 1999

Dear

Karen Benzies, a graduate student in the Faculty of Nursing, sent you a letter about 3 weeks ago. The letter asked you to participate in her study and included two sets of questionnaires to fill out.

If you would like to participate, Karen would appreciate it if you could mail back the questionnaires as soon as possible. If you do not wish to participate, then please return the unanswered questionnaires in the stamped, self-addressed envelope. This will let her know that you do not want to participate.

In case you have misplaced the questionnaires, I have included a second set. Should you have any questions or concerns about the study or the questionnaire, please call me at (780) 492-5931. You may call collect. I would be pleased to answer any questions you might have.

We know how busy family life can be. We appreciate the time you have already given us and wish to thank you for considering participation in this study.

Sincerely,

Margaret J. Harrison, RN, PhD
Faculty of Nursing

Instructions for telephone reminder to parents

To commence June 12, 1999.

Please ask to speak to either parent of the child participating in the Parent-Infant Project. Introduce yourself as a research assistant associated with the Project. State:

"About two months ago, Karen Benzies, a graduate student in the Faculty of Nursing, sent a letter to you asking if you would participate in her study. In the envelope were two questionnaires for you to fill out.

If you are interested in participating in this study, Karen would appreciate if you could mail back the questionnaires as soon as possible. If you do not wish to participate, then please return the questionnaires unanswered. This will let Karen know that you do not wish to participate. If you have misplaced the questionnaires and need a replacement, I would be glad to send some to you.

If you have any questions or concerns about the study or the questionnaire, I will be pleased to answer them. If you wish to speak to Dr. Harrison, I will ask her to call you back. We realize how busy family life can be. We appreciate the time you have already given to the Parent-Infant Project. Thank you for considering participation in this study."

Appendix B

Phase I - Demographic Information Form

Parent-Infant Project

General Information

Family Code Number_____

A. Information about _____
(child's name)

1. In general, would you say that your child's health is:

- ☐ Excellent
- ☐ Very good
- ☐ Good
- ☐ Fair
- ☐ Poor

2. Does your child have chronic health problems or disabilities? ☐ Yes ☐ No

a. If Yes, please describe. _____

_____

3. Has your child had any physical, emotional, or behavioural problems requiring attention by a specialist? ☐ Yes ☐ No

a. If Yes, please describe. _____

_____

b. When did these problems start? _____

c. Have these problems ended? ☐ Yes ☐ No

d. When? _____

4. Children today experience many things that affect their development. Has your child ever experienced any of the following?

- ☐ Change in household members
- ☐ Stay in hospital
- ☐ Stay in foster home
- ☐ Other separation from parents
- ☐ Death of a parent
- ☐ Death in the family (other than a parent)
- ☐ Illness/injury of the child
- ☐ Illness /injury of a family member
- ☐ Conflict between parents
- ☐ Mental health problems in the family
- ☐ Abuse/fear of abuse
- ☐ Alcoholism in the family
- ☐ Other (please specify)

_____

B. Information about Your Child's Experience at School

1. At school, your child is in grade _____

2. Did your child attend kindergarten? ☐ Yes ☐ No

3. Since starting school, has your child repeated a grade? ☐ Yes ☐ No

   a. If Yes, what grade is/was repeated? _____

4. At school, how well is your child doing with school work?
   ☐ Very Well
   ☐ Well
   ☐ Average
   ☐ Poorly
   ☐ Very Poorly

5. At school, how well is your child getting along with other children?
   ☐ Very Well
   ☐ Well
   ☐ Average
   ☐ Poorly
   ☐ Very Poorly

6. Does your child receive special/resource help because of a physical, emotional, behavioural, or some problem that limits the kind or amount of school work your child can do? ☐ Yes ☐ No

   a. If Yes, please specify. _____

   _____

C. Description of your Family

1. How many children live in your home? _____

2. List the year of birth for those children. _____

3. Are the birth parents residing together? ☐ Yes ☐ No

   a. If No, do you have a new partner? ☐ Yes ☐ No

4. Describe how you share the parenting of your child? _____

_____

5. We know that raising children is expensive these days. Per year, how much family income do you have to work with?

- ☐ less than $20,000
- ☐ $20,000-29,999
- ☐ $30,000-39,999
- ☐ $40,000-49,999
- ☐ $50,000-59,999
- ☐ $60,000-69,999
- ☐ $70,000-79,999
- ☐ more than $80,000

D. Information about the Parent

1. What is your relationship to the child? ☐ Mother ☐ Father

2. Your age at last birthday? _____

3. How many years of full-time education have you completed? _____

4. What is the highest level of education that you have completed?

- ☐ Junior high school
- ☐ Partial high school
- ☐ High school graduate
- ☐ Partial college/ specialized training
- ☐ College/University
- ☐ Graduate school degree
- ☐ Other (please specify)

_____

5. On average how many hours per week do you work for pay? _____

6. What is your job title? _____

7. What are your most important duties/activities?

_____

_____

Thank you for taking the time to fill out this information sheet.

Appendix C

Parenting Stress Index

The Parenting Stress Index can be obtained from Multi-Health Systems Inc., 65 Overlea Blvd., Suite 210, Toronto, ON, M4H 1P1.

Reproduction of the Parenting Stress Inventory is not permitted due to copyright restrictions.

Appendix D

Dyadic Adjustment Scale

The Dyadic Adjustment Scale can be obtained from Multi-Health Systems, Inc., 65 Overlea Blvd., Suite 210, Toronto, ON, M4H 1P1.

Reproduction of the Dyadic Adjustment Scale is not permitted due to copyright restrictions.

Appendix E

Eyberg Child Behavior Inventory

Permission to photocopy the Eyberg Child Behavior Inventory granted to Karen M. Benzies by Psychological Assessment Resources, Post Office box 998, Odessa, FL 33556, Telephone: (813) 968-3003.

Unauthorized reproduction of the ECBI is not permitted due to copyright restrictions.

Appendix F

National Longitudinal Survey of Children and Youth

Behaviour Items Subscales

Permission to photocopy the Behaviour Item Subscales from the NLSCY granted by S. Michaud, Special Surveys Division, Statistics Canada, Room 2700 Main Building, Tunney's Pasture, Ottawa, Ontario, K1A 0T6.

NLSCY Behaviour Item Subscales

"Please answer the following questions about how our child seems to feel or act. Using the answers 'never or not true', 'sometimes or somewhat true', or 'often or very true', how often would you say that your child....."

0 = NEVER OR NOT TRUE
1 = SOMETIMES OR SOMEWHAT TRUE
2 = OFTEN OR VERY TRUE

PROSOCIAL BEHAVIOUR SUBSCALE			
1. Shows sympathy to someone who has made a mistake?	0	1	2
2. Will try to help someone who has been hurt?	0	1	2
3. Volunteers to help clear up a mess someone else has made?	0	1	2
4. If there is a quarrel or dispute, will try to stop it?	0	1	2
5. Offers to help other children (friend, brother, or sister) who are having difficulty with a task?	0	1	2
6. Comforts a child (friend, brother, or sister) who is crying or upset?	0	1	2
7. Spontaneously helps to pick up objects which another child has dropped (e.g.) pencils, books, etc.) ?	0	1	2
8. Will invite bystanders to join in a game?	0	1	2
9. Helps other children (friends, brothers, or sisters) who are feeling sick?	0	1	2
10. Takes to opportunity to praise the work of less able children?	0	1	2
EMOTIONAL SYMPTOMS SUBSCALE			2
11. Seems to be unhappy, sad, or depressed?	0	1	2
12. Is not as happy as other children?	0	1	2
13. Is too fearful or anxious?	0	1	2
14. Is worried?	0	1	2
15. Tends to do things on his or her own-is rather solitary?	0	1	2
16. Cries a lot?	0	1	2
17. Appears miserable, unhappy, tearful, or distressed?	0	1	2
18. Is nervous, highstrung, or tense?	0	1	2
19. Has trouble enjoying himself or herself?	0	1	2
ATTENTION DEFICIT/HYPERACTIVE DISORDER SUBSCALE			
20. Can't sit still, is restless or hyperactive?#35	0	1	2
21. Is distractible, has trouble sticking to any activity?#34	0	1	2
22. Fidgets?	0	1	2
23. Can't concentrate, can't pay attention for long?#31	0	1	2
24. Is impulsive, acts without thinking?	0	1	2
25. Has difficulty awaiting turn in games or groups?	0	1	2
26. Gives up easily? *	0	1	2
27. Cannot settle to anything for more than a few moments?#31	0	1	2
28. Stares into space?	0	1	2

29. Is inatttentive?#31	0	1	2
CONDUCT DISORDER SUBSCALE			
Physical Aggression			
30. Gets into many fights? #26,27	0	1	2
31. Is disobedient at school? *	0	1	2
32. Tells lies or cheats? *#22	0	1	2
33. When another child accidentally hurts him or her (such as bumping into him or her) assumes that the other child meant to do it and then reacts with anger and fighting?	0	1	2
34. Physically attacks people?#26,27	0	1	2
35. Threatens people?	0	1	2
36. Is cruel, bullies, or is mean to others?	0	1	2
37. Kicks, bites, hits other children?	0	1	2
Property Offences			
38. Steals at home?#21	0	1	2
39. Steals outside the home? #21	0	1	2
40. Vandalizes?	0	1	2
41. Destroys his or her own things?#19	0	1	2
42. Destroys things belonging to his or her family, or other children?#19	0	1	2
Indirect Aggression			
43. When mad at someone, tries to get others to dislike that person?	0	1	2
44. When mad at someone, becomes friends with another as revenge?	0	1	2
45. When mad at someone, says bad things behind the other's back?	0	1	2
46. When mad at someone, says to others: let's not be with him or her?	0	1	2
47. When mad at someone, tells the other one's secrets to a third person?	0	1	2

corresponding item on the ECBI

* Items in NLSCY survey not included in Human Resources Development Canada/Statistics Canada. (1996). Growing Up in Canada: National Longitudinal Survey of Children and Youth. Ottawa, ON: Author.

Appendix G

Information Sheet for Interviews with Parents

UNIVERSITY OF ALBERTA

Undergraduate Office
3-109 Clinical Sciences Building
Phone: (780) 492-4404
Fax: (780) 492-4844

Graduate Office
3-134 Clinical Sciences Building
Phone: (780) 492-6251
Fax: (780) 492-2551

Research Office
3-126 Clinical Sciences Building
Phone: (780) 492-6832
Fax: (780) 492-2551

Teaching Office
4-111 Clinical Sciences Building
Phone: (780) 492-6240
Fax: (780) 492-2551

General Information
3-114 Clinical Sciences Building
Phone: (780) 492-4404
Fax: (780) 492-2551

Office of the Dean
3-129 Clinical Sciences Building
Phone: (780) 492-6236
Fax: (780) 492-2551

Title of Project: Growing Up: The Child Behaviour Study

Investigator: Karen M. Benzies, RN, MN
PhD Candidate, Faculty of Nursing,
University of Alberta.
Telephone: (780) 492-7344.

Supervisor: Margaret J. Harrison, RN, PhD
Professor, Faculty of Nursing,
University of Alberta.
Telephone: (780) 492-5931.

Purpose: The purpose of this study is to find out what parents think about their child's behaviour and how they handle their child's behaviour in their everyday lives. This study is part of the investigator's graduate thesis.

Background: Parents in the Parent-Infant Project study were mailed child behaviour questionnaires. Parents who said that their child had a lot of problem behaviours have been asked if they are willing to be interviewed by a researcher about what it is like to be a parent to their child.

Procedures: If you agree to take part in this study, you will be interviewed once. The investigator will ask you questions about your child and how you handle your child's behaviour in your everyday life. The interview will be held at a time and place that is best for you. The interview will last 1 to 1 1/2 hours. The interview will be tape-recorded. The tape-recorded interview will be typed out. The investigator may call you if the words on the tape are not clear.

Benefits: There are no direct benefits to you if you take part in this study. This study may help health care professionals decide the best way to help parents in the future.

Risks: We do not expect that being in this study will harm you.

Confidentiality: Your name will not be included on the typed interview or in any report or presentation on this study. Only code numbers will be used to identify your interview. All information will be held confidential except when professional codes of ethics and/or legislation require reporting. If you tell me about abuse of someone under the age of 18, I will discuss this with you. I will need to report this to Family and Social Services. I will also contact the community health nurse and ask her to visit you. This information cannot be kept confidential. The tape and the typed interview will be stored in a locked file cabinet. Only the Parent-Infant Project research team will have access to the locked file cabinet. At the end of the study, the typed interview and the tape recording will be kept

for at least 7 years. The investigator will get permission from the ethical review board if the interview is looked at again.

Freedom to withdraw: You do not have to answer any question you do not want to answer. You are free to withdraw from this study at any time by telling the researcher or Dr. Harrison that you no longer wish to participate. You do not have to give a reason.

Additional contacts: If you have further questions you can contact Dr. Margaret J. Harrison at (780) 492-5931. Long distance charges will be accepted for collect calls. If you have concerns about how this study is being done, you can contact the Patient Concerns Office of the Capital Health Authority at (780) 492-9790. This office has no link with the researcher.

Appendix H

Consent for Parent Interviews

UNIVERSITY OF ALBERTA

Title of Project: Growing Up: The Child Behaviour Study

Principal Investigator: Karen M. Benzies, RN, MN, PhD Candidate,
Faculty of Nursing,
University of Alberta.
Telephone: (780) 492-7344.

Supervisor: Margaret J. Harrison, RN, PhD
Professor, Faculty of Nursing,
University of Alberta.
Telephone: (780) 492-5931.

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Do you understand that you have been asked to be in a research study? ☐ Yes ☐ No

Have you read and received a copy of the attached Information Sheet? ☐ Yes ☐ No

Do you understand the benefits and risks involved in taking part in this research study? ☐ Yes ☐ No

Have you had an opportunity to ask questions and discuss this study? ☐ Yes ☐ No

Do you understand that you are free to refuse to participate or withdraw from the study at any time? You do not have to give a reason. ☐ Yes ☐ No

Has the issue of confidentiality been explained to you? ☐ Yes ☐ No

Do you understand that that you will be interviewed and that the interview will be tape-recorded? ☐ Yes ☐ No

Do you understand who will have access to your interviews? ☐ Yes ☐ No

This study was explained to me by :_____

I agree to take part in this study.

_____	_____	_____
Signature of Research Participant	Date	Witness (optional)
_____		_____
Printed Name		Printed Name

I believe that the person signing this form understands what is involved in the study and voluntarily agrees to participate.

_____

Faculty of Nursing

Appendix I

Phase II - Interview Protocol for Parent Interviews

I will begin by reminding you that any information you provide is confidential, except when professional codes of ethics and/or legislation require reporting. Your comments will help us to understand what parents think about their child's behaviour and how they handle their child's behaviour in their everyday lives.

Tell me about your experience of being a parent to _____.

1. In what ways is parenting your child fun?
2. What are some of the challenges you have experienced in being a parent to _____?
3. In what ways is parenting your child stressful?
4. How does the way your child act affect you? Your family? Other areas of your life?
5. What things influence the way your child acts? Child, family, and societal level influences.

   Probes: Child: Some parents have said that being born early (before the expected due date) affects their child's behaviours later in life. How would you respond to that idea? Some parents have said that being a boy or girl affects their child's behaviours. How would you respond to that idea?

   Probes: Family: Some parents say that it is harder to parent if they don't feel well or are under stress. What experiences have you had? Some parents have said that help from a supportive partner helps them with parenting. What experiences have you had?

   Probe: Societal: Other parents have said that not having an education, good job, or being poor affects their child's behaviour? How would you respond to that idea?
6. Who has been most helpful to you in parenting your child? How?
7. What could health professionals do to help parents in parenting? What resources would you like to have?
8. **Additional probes** added to explore issues of parenting in the family of origin and social support.

Probe: Some parents tell me that they parent their children similar to how they were parented. How would you respond to that idea? If you parent your child differently than you were parented, how did you decide how to parent?

Probe: When you think of the support that you have for parenting your children, where has this support come from? How does this support make a difference in your parenting? Have the source of support and the type of support changed over time? Can you tell me more about that? What other types of support might have been useful?

Thank you for sharing you ideas and comments with me. I appreciate the time that you have spent during this interview. Now that the interview is finished, I want to confirm your willingness to participate in the study. Can this interview be included in the study?